2.27 The Committee is of the opinion that the Government should take immediate steps to formulate a special credit scheme for small entrepreneurs in the informal sector and also a Credit Guarantee Scheme as envisaged in the Development Plan for the informal and small industrial units with marginal credit worthiness. The details of the two schemes would need to be worked out. But the Committee feels that the scheme may appropriately be administered by one of the existing financial or banking institution like the KIE or the Kenya Commercial Bank.

2.28 To assist in the marketing of the products of informal and small sector units, the Government may consider reserving selected products for manufacture in this Sector. The Committee further recommends that a suitable price preference of about 10-15% over the products of the organised sector be accorded in purchases by the Government for its own use.

2.29 For the purpose of assisting KITI in the implementation of the schemes suggested in this report, the Committee recommends that assistance by way of equipment, including mobile vans, fellowships and consultants, etc., be obtained from international organisations like the United Nations Industrial Development Organisation and Commonwealth Fund for Technical Cooperation, and also from other organisations and countries on a bilateral basis.

2.30 In keeping with the expanded role of KITI as outlined in the preceding paragraphs, the Government may consider changing the name of KITI to Kenya Industrial and Entrepreneural Development Institute (KIEDI), Kenya Industrial Service Institute (KISI) or Kenya Industrial Extension Service Institute (KIESI) as may be found appropriate.

2.31 The Committee is of the view that the programme for re-organisation of KITI outlined in this report, should form an integral part of the development programme for informal and small industries as envisaged in the Development Plan which, inter alia, includes:

a) establishment of a Programming & Evaluation Section in the Ministry, and

b) expansion of the industrial development services to cover provinces and districts.

2.32 It is considered necessary that steps should be taken as early as possible for setting up Provincial and District Informal/Small Industries Development offices.

2.33 The Committee has at the end suggested a plan of action and steps to be taken for implementing the various recommendations made in this report.

CHAPTER III

3. INTRODUCTION - BACKGROUND INFORMATION

3.1 National Objectives

3.1.1 The Development Plan, 1979-83, has singled out the alleviation of poverty in the country as the most important national objective. To achieve this goal, the Government has prepared broad based programme for all sectors including agriculture, industry, trade, social services, education and training. The first step proposed towards the programme of poverty alleviation is to ensure the basic needs to the vulnerable sections of the population. The basic needs comprise, among others, food, shelter, clothing, education, and health facilities. When translated into economic programmes of action, it implies further development of agriculture, larger production of low-cost building materials, expansion of capacity to produce clothing, footwear and increased production and facilities to repair agricultural implements and transport equipment as well as a wide variety of other productive and social service activities catering to the day-to-day needs of the rural population.

3.1.2 The Development Plan has taken note of the fact that there is a growing tendency in the country for the migration of the people from the rural to the urban areas in search of job opportunities. It is the Government's policy to discourage such movements by taking suitable steps for creation of employment opportunities in the rural and semi-urban areas, provision of infrastructural facilities and provision of fiscal incentives for industries to be established in these areas, etc., so as to reduce rural-urban disparities in employment opportunities and economic development.

3.1.3 In view of the importance of productive activities both for the alleviation of poverty and increasing the supply of goods and services to meet the basic needs of the people, the Development Plan has emphasised the need for the promotion of informal and small industries particularly in the rural areas. The Development Plan has also taken note of the role of rural industrialisation in moving towards the goal of balanced regional economic development. The "success in achieving this goal will make it possible for the benefits of industrial growth to be geographically distributed as widely as possible and for different regions of the country to develop harmoniously." It is also proposed that the rural industrialization programme will be used as one of the vehicles to encourage the entry of Kenyans in the manufacturing sector. To quote from the Plan again: "the Government will take positive steps to train local entrepreneurs and to promote rural and informal sector units, which are the seed beds for the future industrial development of the country." The Government is aware of the fact that the programme of industrialization envisaged for the Plan period will need technical and managerial manpower at all levels. Since labour is an abundant resource in the economy the Government has plans to raise labour productivity by offering training facilities at all levels of skill formation in different institutions in the country.

(1)

(2)

3.2 Industrial Strategy and Targets

3.2.1 The manufacturing sector occupies the commanding heights of the Kenyan economy, ranking second in importance only to agriculture. The sector is the most dynamic in the

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(1) Development Plan 1979-83 p.339

(2) ibid p.331

economy as is reflected in its consistently high growth rates particularly since the Independence. For example, between 1972 and 1978 the cumulative growth rate in the sector was 11.3 per cent per year, as against the target of 10.2 per cent envisaged in the Development Plan just completed. The total wage employment in the sector at 105,000 accounts for a fifth of the wage employment in the private sector in the country. The future expansion of this sector is envisaged as a major source for generation of opportunities for employment and income for the rural and urban people. The current Plan has noted that "an increasing number of people are entering the employment market, while the problem of unemployed school leavers is becoming acute. The programmes in the Manufacturing Sector will therefore be so designed as to promote the absorption of as many employees as possible in productive work[1]."

3.2.2 The specific strategies proposed in the Plan such as the choice of appropriate technologies and promotion of small-scale, rural and informal sector enterprises, are expected to open up large-scale opportunities for gainful employment during the Plan period. The Plan has, therefore, emphasised that it will be "necessary to provide the potential job seekers in the sector with adequate facilities for the basic skill formation. It will also be necessary to upgrade the existing skills of those already employed and those who have already undergone some training in different technical institutions in the country." It is proposed to fully utilize the technical training facilities available in the public and private sector institutions and to augment them whereever necessary. Enrolment in Government aided technical schools including the Harambee Institutes of Technology, Polytechnics, Directorate of Industrial Training, Management Training and Advisory Centre, Kenya Industrial Training Institute and private voluntary institutions such as those sponsored by the

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(1) Development Plan 1979-83 p.329

National Christian Council of Kenya, YMCA and Partnership for Productivity will be increased and the quality of their training also proposed to be upgraded and "co-ordinated with the requirements of the Development Plan through the informal sector development programmes."(1)

3.2.3 The Plan has set a target of 9 per cent growth rate for the manufacturing sector providing 50,000 new job opportunities, of which 10,000 are expected to be in the informal manufacturing sector. It is assumed that of 10,000 fresh employment opportunities, about 5,000 will be created through expansion and diversification of the existing informal units. New units will have to cater to the balance of 5,000 persons. Assuming an average employment of 5 persons per unit, about 1,000 new units will have to be promoted. In other words, about 1,000 new entrepreneurs will have to be trained by KITI and assisted to set up their projects. However, assuming further that about 40 per cent of the persons trained by KITI will eventually become self-employed, about 2,500 persons will have to be trained over the Plan period i.e. at the rate of 500 persons per year. Taking into account the present capacity of KITI and the time likely to be taken in its expansion and implementation of the Committee's recommendations, it would be possible to assist only about 300-350 trained graduates to set up their own units during the remaining part of the Plan period.

3.2.4 The informal industrial sector covers not only manufacturing and service units, but also handicrafts. A very large number of persons is dependent on production of a variety of handicrafts. A few public institutions and a number of private voluntary agencies are already engaged in providing training facilities in traditional and other crafts, e.g., wood carving, weaving of grass and different fibres, cutting and polishing of gemstones, etc. The working of these institutions may be reviewed so as to assess the follow-up programmes. Prima facie, however, the Committee is of the

(1) 1979-83 Development Plan p.331

view that such training facilities should continue to be encouraged and assisted and that the craftsmen and others trained in KITI through short-term courses should also be eligible for the financial and other facilities proposed in this report for the KITI graduates.

3.3 Role of Rural Industries

3.3.1 The Plan has given high priority to a programme to encourage and support small-scale and rural industries in the country. It is recognised that there is great potential for small-scale and rural manufacturing and service industries for producing cheaply and profitably, goods both for local consumption, import substitution and exports. The labour intensity of these industries is considered as a desirable characteristic deserving Governmental support. It is also recognised that a large number of small-scale manufacturers are currently faced with a number of handicaps. "They not only lack production expertise and capital, but also knowledge in cost control, accounting, marketing, management and quality control. The Government will adopt major new initiatives concerning the promotion of small-scale industries and the alleviation of some of their handicaps."

3.3.2 From the organisational point of view, the Plan has stated that the informal production units in the manufacturing sector will be assisted during the Plan period to enable them to become more productive and to absorb more employees. A new Programming and Evaluation Unit is to be established for this purpose in the Ministry of Industry. It will assist the District Development Committees in the preparation of coordinated programmes for the development of informal and small industries. The Ministry will also expand industrial extension services to cover provinces and districts to promote rural industrialisation. Further, the Government will encourage voluntary social service agencies such as the

N.C.C.K., the Y.M.C.A., Partnership for Productivity, Action in Distress, Village Polytechnics, etc., to play their rightful role in assisting informal industrial and handicrafts units throughout the country. These agencies will be actively involved in the planning and implementation of assistance programmes for the informal sector.

3.3.3 In the programme section of the Plan, a provision of K.Shs 50 million has been made for the development of this sector. The Plan has also a proposal to establish a credit guarantee scheme for loans given by commercial banks to small scale industries. In order to encourage dispersal and promote employment in industries, the differential investment allowance scheme is proposed to be modified. The role of the small-scale and rural industries in the development programmes for specific industries included in the Development Plan is briefly reviewed in the following paragraphs.

3.3.4 In the food, beverages and tobacco sector, apart from the developments in the large units such as creameries, cashewnut factory, oil extraction, etc., it is envisaged in the Plan that a number of small-scale projects will be established in proximity to be perenial sources of raw materials. It is also proposed that rural posho mills as well as modern small-scale grain milling units will be encouraged during the Plan period. A number of small-scale rural bakeries will be promoted. The Government will assist the establishment of a number of small sugar plants in selected parts of the country with climatic conditions suitable for sugar cane cultivation.

3.4.5 In spinning, weaving and finishing of textiles, in addition to the fuller utilization of existing capacity as well as expansion of capacity of some of the existing large units, it is also recognised that there is scope for establishing small-scale weaving units to produce specialised fabrics which are uneconomical to be produced in the larger units. Printing and finishing facilities for these small-scale units is proposed to be provided by a centralised unit. In the wearing apparel sub-sector, the Plan has suggested the promotion of small-scale garment making units in the industrial estate programme, initiation of a training programme for designing, cutting, stitching, etc., for existing and prospective garment manufacturers and to facilitate small garment makers to participate in the Government tendering system.

3.3.6 The Committee is of the opinion that subject to techno-economic considerations, new units for spinning or yarn may be established in the rural area. Garment making is also considered as a suitable rural industry.

3.3.7 In the leather products sector, the Government will encourage the manufacture of travel bags, handbags, purses and similar articles using locally available finished leather and skins. A number of traders and artisans previously engaged in the processing and sale of game skins and trophies, will be encouraged to produce and sell handicrafts made out of bovine leather, sheep and goat skins. Shoe makers in the informal and small-scale business sector will be encouraged to increase the production and supply of cheaper types of footwear to the poorer sections of the society. The K.I.E. programme will be utilised to provide extension facilities and training opportunities to small scale and informal sector units. Public and private extension agencies in different districts will be encouraged and assisted in preparing schemes and promoting small units in the informal sector.

3.3.8 The Committee is of the view that it is in the interest of the country to promote tanneries as well as the manufacture of shoes, hand bags and other leather products in the rural areas.

3.3.9 The Government has recognized that the wood carving industry is highly labour intensive with great potential for large earnings by the craftsman. During the Plan period, the Government will take institutional measures to assist the craftsmen to upgrade their skills in precision carving, to be creative and original and to make their carvings reflect Kenyan culture and traditional designs. Stress will be laid on individual creativity to make the carvings more attractive. Wood carving is ideally suited for being established in the rural areas in an organised way, either through co-operatives, individual, private or partnership entrepreneurship.

3.3.10 In the furniture industry, the Government will assist the small-scale enterprises and individual carpenters to up-grade their expertise through extension facilities and provide them financial assistance to purchase equipment, tools and raw materials. They will also be encouraged to tender for the furniture requirements of local government offices, schools, hospitals and other institutions.

3.3.11 For the manufacture of paper and pulp, the long-term policy of the Government is to encourage the manufacture of pulp centrally and to establish small-scale paper making units on a decentralised basis to meet the increasing demand for different varieties of paper in the country. Paper conversion industries can easily be established in the rural areas in a decentralized way by small entrepreneurs.

3.3.12 For the soap, perfumes and cosmetics sector, the long term policy of the Government is to encourage the larger units to concentrate on the manufacture of high priced sophisticated soap, detergents, cosmetics and perfumes,

leaving the manufacture of ordinary laundry and bath soap consumed by the low-income group people to the small-scale and informal units which can be established in the rural areas. The K.I.E. programme will be involved in the preparation of small-scale schemes, loan provision for obtaining equipment and technical expertise to manufacture soap.

3.3.13 In the metal furniture and fixtures sub-sector, a large variety of labour-intensive activities can be undertaken in the rural areas. Metal furniture, sheet metal containers such as buckets, water tanks, etc., are some of the prospective product lines for this purpose.

3.3.14 Service industries such as repair of bicycles, agricultural implements, tractors, automobiles and electrical equipment can be established in the rural areas depending on the intensities of their requirements in different locations.

3.4 Training Needs for New Entrepreneurs

3.4.1 As stated earlier, based on the target envisaged under the Plan, about 1,000 new units will have to be promoted over the Plan period, which could provide employment to about 5,000 persons. However, since only about 40 per cent of the persons trained at KITI could be expected to become self-employed, training facilities will have to be expanded for about 2,500 persons, or about 500 per annum. As against this, the expansion of KITI visualised under the Plan is to increase its capacity from 120 to 300 students per year. Taking into account the need for the development of trained entrepreneurs over the next decade, it is considered necessary that steps should be initiated during the current for establishing two or three new KITIs in the Central, Western and Coastal Provinces.

3.4.2 Along with the steps for establishment of two or three new institutes like the KITI, it will also be necessary to initiate arrangements for provision of financial and other developmental extension services to the graduates of the new institutes.

3.5 Existing Training Institutions

3.5.1 Kenya has a variety of technical training institutions some of which are established and maintained by the Government, some more are organised on harambee or self-help basis and a number of others run under the auspices of several social service voluntary agencies. The main characteristics of these institutions are briefly outlined below.

i) Polytechnics: The Polytechnics at Nairobi and Mombasa are primarily geared to improve the technical skills of those already employed in industries and, therefore, admit students sponsored by different employers. These polytechnics offer long and medium-term courses in many disciplines leading to diplomas. They have no facilities for imparting managerial training or courses in entrepreneurial development.

ii) Directorate of Industrial Training: This Directorate in the Ministry of Labour offers short-term courses in different trades and also conducts tests. Its certificates are accepted for skilled jobs by employers.

iii) The Management Training and Advisory Centre: This Centre was started in 1966 mainly to provide facilities for training of supervisors and managers for the medium and large industries. However, in the context of acquisition of small businesses by Kenyans, it was decided in 1971 to re-organise the Centre for providing training facilities for the Kenyans to run small and medium scale businesses. The 'businesses' cover

manufacturing as well as a large spectrum of other commercial enterprises including retail business. Although the Centre is intended to provide management training to those in business, prospective entrepreneurs are also accepted for training.

The different trades for training have been selected on the basis of surveys. The courses are also up-dated and revised from time to time. The courses are mostly for short-term periods (about 2 weeks) and cover topics like accounting for small business, small industry management, export marketing, wholesale and retail distribution, salesmanship, etc. The courses consist of lectures, discussions and also case studies. Residential facilities are provided for all the courses - the Farmers' Training Centres are utilised for the purpose of courses outside Nairobi. Roughly, while about 75% of the training facilities are being utilized by medium and small-scale enterprises the large organised business avail of the remaining facilities. The fee charged from small business people is K.Shs 300/- per head per course; K.Shs 1,200/- are charged from large enterprises. Wherever considered necessary, refresher courses are also arranged.

iv) Harambee Institutes of Technology: Several schemes for setting such institutes in different parts of the country are at various stages of implementation. They are expected to specialize in different activities and are maintained mostly on a self-help basis. Some Members of the Committee visited the Kiambu Institute of Science and Technology which is open for 'O' level school leavers. The main objective of the institute is to train young Kenyans in different skills and abilities and also to assist them in employment or self employment preferably in the rural areas. Besides a 2-year secretarial course, the Institute provides 3-year courses in the following fields of building trac

a) Masonry/concreting,

b) Plumbing/water supply,

c) Carpentry/Joinery,

d) Electrical installations and applied energy technology.

All the courses include training in management, book-keeping, accountancy, etc. So far, about 260 students have passed out from the Institute. At present, its intake capacity is 80 trainees per year. Each trainee is provided with a tool kit for the trade he is selected for training. The cost of a tool kit varies between K.Shs 1,600 to 2,000, depending upon the trade. This is supplied as a part of a "Tool Kit Fund Scheme", which has to some extent, been financially assisted by the Co-operative Action Programme of the UNESCO. However, the total 3-year cost of training is estimated at about K.Shs. 11,500/- per trainee, including the cost of the tool kit. This is financed as follows:

	Per Head (K.Shs.)
Government Aid ..	2,600
Fees paid by a trainee ..	1,500
Profits from Coffee plantation, contracts obtained by the KIST Construction/ Consulting firm and a Carpentry workshop	7,400
	11,500

The main aims of the KISTC Construction/Consulting firm are to advise and/or accept building construction contracts and get these executed through groups of the graduates of the Institute by supplying them the necessary building and other materials. It was, however, pointed out by the Principal of the Institute that considerable difficulties have been experienced in organising groups of the graduates of the Institute. At the same time, it has been difficult for the graduates to start their own enterprises as carpenters, plumbers, etc., owing

mainly to their inability of obtaining credit facilities. According to him, an average of about K.Shs. 10,000/- per head are required for starting a small business, but the banks are unwilling to advance loans since most of the graduates are not in a position to furnish any security for such loans. Despite these problems about 10% of the graduates have been able to set up their own businesses. The Institute's Principal was of the view that some suitable mechanism should be found to provide credit facilities to the graduates through the District Development Committee, with which he is associated. A fairly modern workshop has also been started by the Institute which is producing a variety of furniture against private orders. This is working on a commercial basis.

v. The Village Polytechnics: The aim of these Polytechnics is to assist school leavers and artisans in becoming self employed. Three basic principles that the Polytechnics follow are:

a) the training of young people should not be isolated from the surroundings;

b) the training should help rural areas as a source for earning income and investing the savings in the rural areas; and

c) the training should be locally developed and managed.

Most of the trainees are primary school leavers. However, in crafts which do not need education such as basket-making, bee-keeping, etc., even the uneducated are admitted. The duration of the courses range from 2-3 months (as in the case of bee-keeping) to 2 years in the case of carpentry, blacksmithy, etc. The fees charged vary between Shs. 40 to 800 per annum,

depending on the economic conditions of the people in different areas. Most of the trainees belong to poor families who undertake productive work during their training which brings in some revenue. This revenue is distributed as follows:-

1/3 for tools,

1/3 as pocket money to the trainees, and

1/3 for incidental expenses.

The N.C.C.K. has estimated that the minimum capital required by a graduate in carpentry and woodworking to be self-employed is as follows:

K.Shs	
20,000	for tools
5,000	for raw materials
5,000	for working capital
30,000	

Again, according to the surveys conducted by the N.C.C.K., the percentages of graduates who became self-employed were as follows:-

	1971	1972	1973	1974
Male	17%	37%	46%	8%
Female	16%	23%	45%	8%

Some staff members of the village polytechnic have taken courses at KITI, which they found very useful.

One of the main handicaps of the graduates in going for self-employment was stated to be lack of initial capital. The N.C.C.K. is in a position to assist the graduates to become self-employed, if they could be provided with the necessary funds for the purpose.

vi. The Christian Industrial Training Centre: The Centre is located in Pumwani, which is a slum area in Nairobi. The Centre provides 2-year courses in the following trades:

a) Carpentry,

b) Painting,

c) Steel Metal Work,

d) Welding, and

e) Fitting and Machining.

The Centre takes 72 trainees every year who have passed CPE, KJSE and 'O' level. The main purpose of the training is to help the trainees to secure productive employment. The Centre has workshop facilities and the time of the training is divided equally between classrooms and workshops. They are trained to produce a variety of articles like - desks, chairs, blackboards, sport goods, slides, swings, hospital equipment, lockers, aids for disabled, wheelchairs, crutches, etc.

The Centre helps the trainees in securing jobs. Normally, there is a great demand for its graduates. Some of the trained go for further training to KITI. Although it is an objective of CITC to encourage its graduates to become self-employed, lack of initial capital, extension facilities and guidance are the major hurdles in achieving the objective. It costs the Centre K.Shs 3,500 per year to train one person. Against this, each trainee is charged only K.Shs. 750 per year. About a quarter of the income of the Centre is obtained from work generated in its workshops, 19% comes from fees and the rest from grants or aid.

vii Partnership for Productivity: This organisation has been engaged in promotion of informal industries since 1971. The promotional activities include advancing of loans.

3.5.2 It is evident from the foregoing brief review of the working of various training institutions that their programmes are primarily geared to skill formation, with only a secondary place, in a few being given to help them to develop entrepreneurial abilities.

3.6 Entrepreneurial Development for Rural Industrialisation

3.6.1 Training for development of entrepreneurs is a comparatively new development both in the industrilized and Third World Countries. The success stories of a number of outstanding entrepreneurs who had no formal training and sometimes not even formal education, has helped to substantiate the belief all over that entrepreneurs are born, and cannot/ need not be trained. It was believed till some time back that the essential characteristic of an entrepreneur was that he overcomes all obstacles and refuses to be intimidated by difficulties that lesser mortals would succomb to. Such a view has been popularised by the image of the poor boy turned large industrialist and often acknowledged by the successful ones to mystify one's success. The magnitude of new investments in any country in the modern world, the complexities of various enterprises, the specialization needed in purchasing, manufacturing, financing, inventory control, selling, etc., makes the one-man-genius - successful entrepreneur less common today. While there will always be those who will plough their own furrow without outside help, there are also many others who can become successful entrepreneurs only if they were encouraged and given appropriate training and financial and techno-managerial assistance. To-day, ther are many instances of trained and technically qualified persons

who have established themselves successfully in a variety of industries of different sizes after being trained as entrepreneurs and obtaining financial and other aid.

3.6.2 Kenya does not have a history of local industrial entrepreneurs over a long period of years. The post-Independence period of industrial development has necessitated public encouragement and promotion of first generation entrepreneurs in this country. Training of first generation entrepreneurs needs a multi-pronged approach, involving motivation, skill formation as well as guidance on new investment opportunities. To add to these, it is imperative that this new class of entrepreneurs be provided with soft credit and other extension facilities. They have in fact to be nursed in order to avoid obvious cases of failures which may have negative demonstration effect on the next generation. A systematic well-coordinated programme for entrepreneural development is, thus very much of an urgent necessity.

3.7 Role of KITI in Entrepreneurial Development

3.7.1 The Kenya Industrial Training Institute (KITI) was started by the Government in 1964 as "a small industry training and research Centre" in collaboration with the Government of Japan. The main objectives of the Centre were "to promote rural industrialisation and transfer of technology through training of artisans who finally would get gainful employment or be self-employed." According to the 1979-83 Development Plan, the Institute is to undertake the following tasks:

i) training technicians for already established industries,

ii) training local artisans for self-employment especially in the rural areas,

iii) carrying out research in industrial projects which involves products that could accelerate rural industrialisation, and

iv) training middle managers for the industrial sector.

A development expenditure of KE 506,000 has been made under the current Development Plan for expansion of KITI including construction of buildings. The Plan envisages that KITI would play a special role in training technicians and potential entrepreneurs to meet the development needs of the rural industries' programme. This renewed emphasis on the primary objective of KITI to develop entrepreneurs will distinguish it from other technical training institutions in the country and would call for reorientation of faculty as well as the contents of the courses so as to make the programme at the Institute 'industry' oriented, as distinct from being as at present "vocation" oriented.

3.7.2 Activities and Achievements of KITI: Over 1,000 trainees have graduated over the last 14 courses offered by KITI since its inception in 1964, through one or the other of the following eight technical sections:-

i) Mechanical engineering (machinery),

ii) General engineering (metal fabrication or millwright),

iii) Electrical/electronics,

iv) Foundry/technology,

v) Automobile engineering,

vi) Woodwork,

vii) Leather work, and

viii) Tailoring/dressmaking.

On an average, the strength in each section is 15 trainees, or a total of 120 for one-year courses beginning in January of each year.

3.7.3 Admission to various courses is conducted through personal interview of candidates based on written application in response to advertisements in the paper. Interviews with some of the old graduates revealed that quite a large number of them are from rural areas and also anxious to settle down in business in their native place. However, in majority of cases, only those who had some industrial or business background in the family and had also some funds to invest had met with success in getting self-employed.

3.7.4 The training programme during the one year course consists of theoretical lectures and practical work in KITI workshops, roughly in 60 and 40 ratio, respectively. Some lectures are devoted to management subjects such as simple economics, book-keeping and marketing. In the past, the Japanese faculty members used to conduct classes in management. But since their departure in 1972, emphasis on this essential aspect of entrepreneural development has gradually got reduced. At present more attention is paid on the graduates to improve technological skills that enable them to obtain trade certificates from the Ministry of Labour.

3.7.5 The different workshops in KITI are fairly well-equipped with machinery and tools obtained orginally from Japan under the Aid programme. Some of them, however, are now worn out and need replacement. While training on traditional lines on the existing equipment and machines is quite good for formation or upgrading of technical skills which stand in good stead for the graduates to work in large establishment, at least some of the equipment is such that would neither be ever used nor be within the reach of small entrepreneurs going to set up their enterprises in rural areas.

3.7.6 The staff presently working in KITI consists of specialists in technical trades, but do not possess adequate knowledge and/or experience to be able to develop entrepreneurship. They themselves need to have an entrepreneurial outlook and be fully conversant with all aspects of the industrial products for which their present respective skills are to be utilised including the status of such industries in the country. Proper orientation and continuous retraining of the staff, both through formal courses and informally, seem to be of paramount importance. There is a need for strengthening the staff both in terms of numbers and desciplines.

3.7.7 There are at present no arrangements in KITI for training of supervisors and foremen to become self-employed. There are also no facilities to undertake prototype development of equipment and tools suitable for use in rural areas.

3.7.8 A limited follow-up of the careers of graduates is carried out by sending them occasional questionnaire which, if completed and returned, serves as feed-back. According to the Principal of KITI, out of about 1,000 graduates trained so far, about 70% are gainfully employed. Further, about 25% of these (i.e., about 250) have started their own manufacturing business." It was not possible for the Committee to verify the accuracy of these figures. If these figures are correct, the achievements of KITI is highly commendable. But the Principal is of the view that the figure of self-employed would need to be verified through a more detailed survey and statistical analysis. The general impression gathered by the Committee after meeting some of the ex-graduates in their place of work, was that the figure of those self-employed may actually be considerably lower. However, this brings out the need for suitable arrangements for collection of detailed information about the graduates after completing their training.

3.7.9 There is at present no technical backstopping of the trainees from KITI. Once they pass out, they are left on their own to find out their way to establish themselves in business or get employed. This situation has let to a lot of frustration on the part of the graduates who had joined the institute with different expectations. Left to themselves, they find it difficult to obtain assistance from financial and other institutions in the country which are engaged in assisting mostly persons having resources to invest, instead of guiding and assisting young enthusiastic first generation skilled entrepreneurs motivated with desire to invest their skills and enthusiasm to start industrial activities with very little or no financial resources of their own. Cases were noticed by the Committee where a few persons who did enter business, had to abandon them owing to a variety of hurdles faced by them which had nothing to do with their technological skills and managerial abilities. The situation would have been different if there was some organisation which could back them and provide them with the necessary guidance and assistance to overcome the series of difficulties in starting small industries and running them.

3.7.10 On the whole, however, the Committee has no doubt that during the last several years of its existence, KITI has rendered yeomen service to the Kenyan industry. It has provided trained technicians to a number of large and medium industrial establishments and has also inspired some of its graduates to become self-employed small entrepreneurs. Nevertheless, its efforts to train and promote small entrepreneurs has met with only limited success owing to, first, inadequcy of training in development of entrepreneurship and, secondly, lack of any programme for providing financial and other assistance to the trained graduates. The few trained graduates who have established themselves in business, have done so against heavy odds with respect to initial capital and other facilities. They represent the small percentage of Kenyans who have resourceful enough to take risks and fortunate enough to succeed.

3.7.11 With an annual budget of over £125,000, the Government expenditure on each KITI student is estimated to be of the order of K.Shs 20,000 a year. This is besides the fees of Shs. 350 paid by each trainee and the little income earned by the Institute through sales of products of the trainees and the other services rendered by the Institute. Provision of additional services to trainees after graduation would no doubt result in an increase of KITI's budget, but it would ensure more purposeful utilisation of the present expenditure on training by enabling more graduates to establish themselves in manufacturing business and, thereby, faster economic growth of the country.

3.7.12 Taking into account the current shortcomings and deficiencies and also the role assigned for KITI in the Development Plan for 1979-83, it is considered necessary that its new re-orientation should be as follows:

a) Improvement in the method of selection of the trainees.

b) Modification of the regular training programmes for development of entrepreneurs.

c) Introduction of training programmes for technical supervisors and foremen to become self-employed.

d) Organisation of extension and consultancy services.

e) Initiation of development of prototypes of products, tools and techniques of production suitable for small industries in rural areas.

CHAPTER IV

4. ENTREPRENEURAL DEVELOPMENT FOR RURAL AREAS

4.1 Rural Area

4.1.1 It is stressed in the Development Plan, 1979-83, that the rural areas must be knit closely with the urban areas because the development of the two areas is interdependent in several respects. For instance, while the urban areas cannot do without the agricultural produce of the rural areas, the latter depend largely on several inputs for agriculture and consumer goods produced mostly in the urban areas. Moreover, any wide disparity in the development as between these areas leads to influx of people from the rural to the urban areas. Therefore, with a view to ensure a balanced development of different areas, different types of centres in the country have been designated and certain guidelines laid down for location in infrastructural facilities at various levels of these centres in order to reduce the incidence of migration and ensure more balanced regional development.

4.1.2 It is in connection with these designated service centres that the urban areas in Kenya are defined as those having a population of 2,000 people or more[1]. Accordingly of 1,681 designated service centres, only 68 were classified as towns (i.e., having population of over 2,000) in 1978 and the number of such towns is expected to increase to 108 by 1983[2]. It follows that all the remaining areas

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(1) vide para 2.97, Development Plan

(2) vide para 2.103, Development Plan

having a population of less than 2,000, may be treated as rural areas.

4.1.3 It is, however, recognised in the Development Plan that " ..... the strategy of concentrating private and public sector investments in particular centres is designed to benefit not just the inhabitants of the centres but the surrounding rural population and those living in nearby centres ....."[1]. Therefore, it is proposed to initiate differential rates under the Investment Allowances Scheme in order to promote dispersal of industries to semi-urban and rural areas and also to encourage adoption of labour-intensive techniques of production. For the purpose of implementing this scheme, a rural town will be considered as having a population of more than 10,000 but less than 30,000 and an urban area as having a population of more than 30,000 persons[2] Further, the Ministry of Commerce and Industry will expand industrial development extension services to cover provinces and districts to promote rural industrilisation[3].

4.1.4 Taking the foregoing into account, the Committee is of the view that except for the rules about public health, sanitation, etc., there should be no other restriction about location of small industries by the Kenyan trained graduates and other technically qualified persons. It is also considered necessary that the recommendations made in this report should be applicable to all towns having a population of less than 30,000 so that the trained and technically qualified Kenyans are able to avail of the investment allowances.

4.2 Prospective Entrepreneurs

4.2.1 The industrial and commercial progress made over the last fifteen years contains ample evidence to confirm the Kenyans are gradually venturing into the industrial

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(1) Para 2.98, Development Plan

(2) Para 7.47, Development Plan

Para 7.25 Development Plan.

fields specially of informal manufacturing and service (repairing) industries, handicrafts, retail trade and other small enterprises and business. Some idea of the number of persons engaged in the informal industrial sector (i.e., manufacturing and service enterprises operating in the open air in a make-shift shelter) can be had from the following figures:-

Informal Industrial Sector
(No. engaged)

	1974	1975	1976	1977	1978
Manufacturing	10,868	9,579	13,877	15,297	17,016
Services	8,580	7,059	8,278	9,761	10,831
	19,448	16,638	22,155	25,058	27,847

(Source: Programme Implementation: Development of the Imformal Industrial Sector, ISPC, July 1979).

4.2.2 The steady increases in the number of persons engaged in the informal industrial sector between 1975 and 1978 is gratifying. However, according to the ISPC's recent report entitled "Development of the Informal Industrial Sector (July 1979) most of the proprietors and skilled employees have been trained on-the-job. Most of the units are single proprietory concerns who have not been able to secure institutional credit owing mainly to the temporary nature of their work places. Without proper buildings, most are also unable to secure trade licences and electricity connections; nor do they have any secure places for storing tools, equipment, raw materials, etc. The tools and equipment used by them are not of the proper grade. Accounts are not properly maintained by most of the units.

4.2.3 Taking into account these and other characteristics of the informal units, a conclusion which may be drawn is that the informal sector has so far grown due largely to the initiative and enterprise of the people themselves. It also follows that a faster and more planned growth can be promoted in this sector through a planned and structured entrepreneural development programme at a place like KITI, followed by guidance and assistance to establish industrial and service units and run them successfully.

4.2.4 Most of the trainees attracted to KITI for improving their capabilities, are first generation entrepreneurs. They possess certain degree of technological skills acquired through formal training or practical experience as employees, and may be in some case even through self-employment. But most of them have practically no knowledge about what it involves to utilise fully their skills in running an industrial enterprise on a commercial basis. They have very little finances of their own to invest. The main force that provides motivation to them to go into business is their will to be self-employed through utilisation of their skills. As opposed to this, the bulk of those who have gone into large or medium industries in Kenya are persons motivated by their desire to invest their resources in order to multiply their resources further. They are assisted in doing so by most credit institutions which are geared to finance people with resources of their own. On the other hand, the first generation Kenya entrepreneurs graduating from KITI are a distinct category who deserve a special consideration and treatment. The time has come when an entirely new approach and attitude has to be adopted towards the needs of trained graduates which calls for re-organisation of the existing credit and other structure to cater to their aspirations and needs. This is essential if the gap between the haves and have nots is to be narrowed down and the Plan objective of alleviation of poverty is to be accomplished.

4.2.5 Almost all potential entrepreneurs require some guidance, assistance and facilities for establishing industries, irrespective of their nature, size and the location. But it is the small entrepreneurs intending to set up industrial units in the rural and semi-urban areas who have to face relatively more hurdles and problems than their counterparts in the urban areas. Besides the inadequcy of the basic infrastructure facilities like power, transport and communications, those in the rural and semi-urban areas have also more difficulties owing to the distance from the principal markets/sources of raw materials, and limited availability of work-places, skilled personnel and other facilities for institutional credit, consultancy services, spares, etc.

4.2.6 For a small entrepreneur and more so in a rural area, there is hardly any choice for him but to be a multi-purpose functionary. Besides being a leader in the technical skills involved in his business, he has to be a purchase man, a personnel manager, a slaes executive, a financial and cost controller, a messenger and pleader in dealings with different Government and other institutions all at the same time. In other words, he has to equip himself to cope with all aspects of his manufacturing business with very little external assistance as it is either non-existent or is too costly for him to employ for his limited needs. While in the long run given adequate time for experience, a person with potential entrepreneural abailities would equip himself for all the tasks, he has to be assisted in the initial stages, if too many failures in the process have to be avoided and wastage of national resources employed in his training is to be minimised.

4.3 Strategy for KITI

4.3.1 The re-organisation of KITI's role as a seed-bed for entrepreneurial development needs to be considered at the following three distinct stages:-

i) at the time of selection,

ii) during training, and

iii) after training.

4.4 Selection of trainees: It is important for KITI to select the type of candidates for training who have the greatest potential for entrepreneurship. Greater the care taken in selecting the candidates and wider the choice from which they are selected, the more successful will KITI be in achieving its training objectives. Apart from advertising extensively through the media for mass communications, KITI should publicise its programmes through newspapers and other means. Candidates having some business experience and also sons of artisans, tailors, carpenters and blacksmiths, traders, etc., are better material for entrepreneurial training than fresh school leavers, without any business background. KITI should therefore, spread its net wider than hitherto.

4.4.1 In order to evolve proper check points or criteria for selection of trainees, it would be advisable for KITI to arrange maintenance of a record of "batting averages." By closely following the graduates after they go out, it should be possible to relate their performance after graduation with their background experience before entering KITI, so as to establish for further guidance the type of persons that would make good entrepreneurs.

4.4.2 As it is, there are far more applicants for training than what KITI can accommodate. This gives ample scope for selection. It would be necessary for KITI to insist upon a certain minimum standard of technical skills in the trainees. The programmes at KITI are not primarily intended for basic skill formation, but these should be for upgrading technical skills and more so for utilisation of skills for products of utility and useful articles. It is in the fields of industrial engineering as well as industrial management that KITI should provide thorough training.

4.4.3 Care would also have to be taken at the time of selection that a candidate has the drive or potential for becoming "a captain of a team" to be able to organise productive work and also to take risks. This would mean he should not look for quick gains, but should have the patience to wait and "defer his consumption", which is an essential qualification of an entrepreneur. In other words, what the Committee would like to stress is that while skills, technical and managerial, can be imparted through a well-designed training programme, there are certain other essential personnel traits which if not developed in a trainee would not make him a successful entrepreneur, howsoever liberal the assistance programme may be. A real entrepreneur is one who has the ability to seek assistance, rather than wait for it to be given.

4.5 Programmes During Training: In the opinion of the Committee, as stated earlier, the training at KITI as at present qualifies the graduates to secure jobs as technicians or supervisors, but does not equip them fully for self-employment. To overcome this deficiency, emphasis would have to be given as much to up-grading of skills as to developing capability to start and manage industrial units. To illustrate the point, instead of training, say, carpenters, it would be necessary to provide training in woodworking industry for manufacture of, say, furniture and also to start and run a unit for, say, production of furniture on a commercial basis. This implies that right from the beginning, instead of having trainees to work on theoretical exercises in making, say, joints and throwing them away, (as is the case with traditional training centres for carpenters), they should be trained initially to make simple articles involving various joints and other operations and followed by more difficult jobs as they advance in the course. While being trained for making utility articles, they should also be taught how to estimate the costs of the materials required, labour and overheads

charges, etc. It would, thus, be possible to synthesise the training programme wherein the technical and managerial aspects are combined together.

4.5.1 The trainees in a class are normally at different levels of initial competence which should be regarded as an added advantage in the sense that a class of, say, 15 pupils, could be considered as an industrial unit having some semi-skilled and the others as skilled workers. The better amongst them could be utilised for distributing jobs to the others according to their skills as is the case in an actual working unit - an ideal situation where practical work experience can be had in "near-to-actual" conditions.

4.5.2 The approach as suggested above would require proper orientation of the faculty members. Instead of being good teachers of say carpentary, they have to be good guides for developing trainees to run and manage carpentry workshops. For this purpose, they themselves have to know all aspects, both general and specific, of the particular trades they belong to. They have also to keep themselves up-to-date with the status of the particular industrial sub-sector in the country - including the raw materials required, the production operations involved, marketing possibilities, etc.

4.5.3 It is also considered necessary that after a couple of months of starting of the training programme, the trainees should be exposed to various opportunities for manufacturing lines and items of production in order to enable them to narrow down their choice for the ultimate group of products to select for production, after graduation. This would enable them to focus their subsequent training in the specific direction and for the trainers to help them in a more purposeful manner.

4.5.4 While fundamentals of management would need to be dealt with in the earlier part of the course in common to all trainees, the application of management principles including cost estimating, accounting, etc., would have to be interwoven in the programme and carried throughout the entire course, and not left to be dealt with separately towards the end of the training period.

4.5.5 Technical skills and managerial talents are necessary for running a business. Yet it is equally important and perhaps more so for the trainees to know how to go about establishing a unit including the formalities involved in setting up units and obtaining monetary assistance to do so, e.g., formulation of a feasibility report for submission to a bank or a development financial institution to obtain credit. Practical exercises for preparation of such projects for specific industries which trainees would like to establish, would need to be carried out during the training period itself. This aspect is dealt in greater detail later in this report.

4.5.6 Besides practical work at KITI, visits to industrial establishments in the country should form an essential part of the training programme. Such visits instead of being for sight seeing albiet technical, should take the form of in-plant training for a few days to get a feel of actual industrial situation. The experience so gained could form the subject of discussion on return from such training.

4.5.7 On similar lines, the trainees during the year should be sent to the areas where they want to establish themselves subsequently in order to study the prospects of a particular product which should also form basis of discussion with the staff. Efforts should be made to have the training programmes organised as near to actual condition of work situation as possible.

4.5.8 In order to equip the trainees better with the type of problems and organisation they are likely to face when setting up an industry, the Committee would suggest a working co-operative arrangement with the concerned institutions for help in entrepreneurial development programme itself while the trainees are at KITI. Their representatives could be treated as members of an extended faculty of KITI and be made responsible to take a certain number of regular sessions during the year on specific subjects, such as formulations of bankable schemes, licensing procedures, etc. Discussions by the Committee with the senior officers of some of the organisations indicated that they would be happy to do so. The trainees would thus establish early contacts with people they will have to deal with later.

4.6 Programmes After Graduation: The following are some of the more important points on which information and guidance is sought by most prospective entrepreneurs for setting up small industries particularly in the semi-urban and rural areas:

(a) Pre-Investment

- What are the main types of industries (based on local resources, skills and markets) which can be started in different provinces, regions or districts?

- What are the economic sizes/scales and production techniques considered suitable for small towns and rural areas?

- What are the main sources for obtaining machinery, equipment, raw materials including addresses of the suppliers, current prices, details of procedures for import/purchases, etc?

- What are the main sources for obtaining credit facilities and the terms and conditions prescribed for long and short-term loans?

- How to prepare a simple feasibility/project report for the industry selected for establishment?

- What permits/licences are required for starting an industry e.g.,, for power and water connections, trade and import licences, permits for salex tax and excise duties, etc., and what procedures have to be followed?

- Which authorities have to be approached for securing workplace/sheds or materials for constructing these?

(B) <u>During Investment</u>

- Which agencies provide assistance for installation of plant and equipment and purchase of raw materials, accounts keeping, costing of products?

(C) <u>Post-investment</u>

- Which agencies provide assistance for marketing of the products within and outside the country, including packaging, transport, freight, etc?

- Which agencies provide advice/assistance for repair, diversification, expansion, etc.

4.6.1 The Committee is of the view that instead of a prospective entrepreneur approaching the different authorities and agencies individually for information and advice on the points listed above, it would be advisable to:

a) prepare a booklet containing all the relevant information and forms required for starting an industry including the names and addresses of the concerned authorities, etc.; and

b) set up a Project Consultancy Division in KITI manned by a few technically qualified persons (like mechanical and chemical engineers, business managers, and economists) who could guide and assist rural entrepreneurs from the stage of selecting a suitable industry and upto the unit going into production and even thereafter.

4.6.2 It would be desirable to set up the proposed Division on a pilot basis within the premises of the KITI to assist mainly the graduates. The Division would also have to function as a "data bank" so as to be able to provide guidance to the prospective entrepreneurs about the type, size and other details of industries to be established. The proposed Division would have to work in close collaboration with the:

a) the teaching faculty of KITI,

b) the Joint Loans Board, and

c) The District Development Committee and other concerned district authorities, local financial and banking institution, etc.

4.6.3 The best of training and exposure to management problems are not likely to make a trainee an entrepreneur, unless he has some financial resources to buy some equipment and tools, raw materials and some money to sustain himself until the sales receipts flow in. A potential KITI trained entrepreneur may need an initial "risk capital" or some equipment on lease terms to start on his own. It is necessary to work out realistic schemes to provide assistance for such initial capital to facilitate the purchase of tools and raw materials. Suggestions in this regard have been offered in a subsequent chapter.

CHAPTER V

5. INSTITUTIONAL PROGRAMMES AT KITI

5.1 Industries in Rural Areas

5.1.1 While it is visualised that some medium and large industries, on account of nearness to raw material sources, and other factor endownments or other socio-economic factors influencing location, will be set up in rural areas on their own competitive merits, the Government has in the Development Plan indicated the role of small-scale and rural sector in a number of specific industries suitable to be established in semi-urban and rural areas. The potentialities for development of various sub-sectors of industry have already been summarised in section 3.3 of Chapter III. Based on these programmes and other information collected by the Committee, a list of industrial products having scope for manufacture in rural areas under different categories and services has been prepared as in Appendix A. The list is illustrative and by no means exhaustive.

5.1.2 Rugular Courses

It is realised that KITI has to adopt a selective approach in regard to the trades for which training facilities should be provided, based largely on availability of local skills, resources and requirements or markets. Keeping this in view, the Committee suggests that KITI's institutional regular programmes may for the present be confined to the following areas:

a) Mechanical Engineering Industry

i) *moulding and foundry works including pattern making

ii) *forging and metal fabrication

iii) *machining and fitting

iv) metal finishing

v) *Plumbing.

b) Electrical Engineering Industry

i) *Maintenance and repairs of electrical equipment

ii) *Electrical Installations

iii) *Maintenance and repair of household and entertainment electronic equipment.

c) Automotive Engineering

i) *Auto Mechanics

ii) *Diesel Engine mechanics

iii) *Panel beating

iv) *Spray painting

v) *Auto wiring and electrical equipment.

d) Wood Working Industry

i) *Joinery (furniture) and upholstry

ii) *Carpentry (wood work relating to buildings and building construction).

e) Plastics

i) Moulding and extrusion

f) Leatherwork

i) *Shoe-making

ii) *Leather goods

g) Ceramic Industry

i) Bricks and Tiles manufacture

ii) Crockery and other ceramic goods

h) Textile Industry

i) *Garments-making

ii) Weaving, knitting, dyeing and printing.

i) Jewelery & Watch Repairs

(N.B. The items marked by * represent the trades for which training facilities are already at KITI; the others are new trades proposed for introduction).

5.2.2 As would be avident from the list, greater emphasis has been given to engineering industries which are considered of paramount importance for development of informal and small industries in rural and semi-urban areas. In terms of the "basic needs" programme of the country, KITI would provide facilities for developing industries required for housing (i.e., bricks and tiles), clothing (i.e., weaving and garment-making) and footwear. Two important areas not covered are: food industries and handicrafts. Both these fields, have a great contribution to make in rural economy.

prima facie, institutional training facilities are not considered necessary for industries like processing of cereals, oilseeds crushing and manufacture of sugar. As regards handicrafts, a number of Government and other agencies are already providing training facilities.

5.2.3 It will be observed that seven of the industrial courses mentioned in para 5.2.1 have been sub-classified into specific trades. The main purpose of this sub-classification is that the candidates joining KITI for, training in one main sector while being given general training in all the fields under the particular course, would have the option to specialise in one or the other of the sub-sectors of industry. It would make their training more specific and relevant to the production lines proposed to be followed by them after graduation.

5.2.4 As stressed earlier also, the main objective of these courses would be not only to improve technological skills but also to train the persons in practical application of the skills to produce goods and services for sale and acquire managerial capability to run the unit most efficiently and economically through, inter alia, hiring right people to work, using proper tools and techniques of production, purchasing the necessary raw materials from right sources and generally attending to all details of business. To get a reasonable return for his skills and investments, the trainee would have to be familiar with the conditions prevailing for the products proposed to manufacture, the money market situation, the markets where the products could be sold profitably, etc.

5.3 Selection of Trainees

5.3.1 Besides the need for adopting certain check-points or criteria for selection of trainees discussed earlier, there

are also important subjective aspects concerning the mental attitude and personality traits which need also to be considered. These are very much dependent on the culture of the people in different regions and would have to be identified as a result of experience in conducting successive selection exercises.

5.3.2 A certain minimum level of technological skills would have to be insisted upon for the entrants to KITI. For this purpose, those who do not possess formal certificates in the concerned trades would have to be put through skill tests.

5.3.3 Once the contents of different courses have been properly developed based on the new orientation of KITI programmes as recommended in this report, it would be desireable to bring out a booklet explaining the philosophy behind the KITI's scheme for entrepreneural development and also containing the detailed syllabi in respect of different courses.

5.4 Vocational Guidances

5.4.1 Besides identifying the potential entrepreneural seed in an individual, it is perhaps equally important, if not more, to assist him in selection of a suitable industry to establish. The earlier he narrows down his choice during the training period, the better it would be, in terms of pursuance of his goal. Vocational guidance assumes importance right from the time that the idea of starting a business comes in his mind. This has to be provided for by KITI.

5.4.2 Soon after admission and starting of a course, the trainees would be informed in great details the prospects of specific items of production, to enable them to choose the specialised field within the sector concerned, e.g., whether to go in for sheet metal or machine shop work in the mechanical engineering trade. From this point onwards, the

training could proceed towards realisation of a trainee's goal to start his production unit for manufacture of particular type of goods after graduation. The training would, thus, become not only industry-oriented but at the same time oriented to a production target.

5.5 Organisation of Training Programmes

5.5.1 Keeping in view the strategy during training outlined in the preceding chapter, the regular one-year training programme may take the form of:

i) theoretical lectures on

- technology,
- basic industrial management concepts,
- industrial economics and outlook.

ii) Practical work experience in KITI's workshops for

- production techniques
- factory management.

iii) Placement in industrial units for short in-plant training.

iv) Visit to rural areas to assess area and industrial potentials,

v) Exercises in preparation of feasibility project reports.

5.5.2 The industrial training officers in-charge of each sectoral industry could undertake theoretical classes on the technology, whereas classes on industrial economics and basic industrial management could be conducted by the Project Consultancy Division of KITI referred to earlier.

5.5.3 The practical work experience should be designed around production of useful and saleable articles as far as possible consistant with the scope of providing proper practical training including job work obtained from the market to be carried out on payment and such other work as may be passed on by the KITI's prototype development workshop.

5.5.4 Each workshop in KITI, as recommended earlier, should be run more or less as an industrial unit and the work inside organised accordingly. To take an example, if a shoe of a particular pattern is given as a practical exercise, a trainee should first be made to calculate the leather required for the upper and the sole and other materials. He should then lay down the specifications, obtain the right materials and select the proper last and the machine to work on and do the actual costing of the job. It is in this way that application of skills and managerial aspects relating to the trade, would be interwoven throughout a course.

5.5.5 Placement in industry for in-plant training would be related to the trainees' proposed production line so as to get a first hand knowledge and experience of actual work situation. Through the good offices of financial institutions like the KIE and associations of industry and trade, it should be possible to get cooperation from a certain number of selected industrial undertakings for short-term in-plant training.

5.5.6 Visits for undertaking area and industrial potential surveys should preferably be to the places where the trainees want to set up their businesses so that during the visit they could check their assumptions and estimates for preparing feasibility and project reports.

5.5.7. The above are only some of the important aspects of training programmes. The actual contents of the syllabi and their working details would have to be thoroughly discussed and developed with the help of those involved in training. Some suggestions in this regard have been given later in this report.

5.6 Short Term Courses

5.6.1 Besides the regular one year courses for prospective entrepreneurs, KITI should also organise short-term courses, three on an average every year, on technological and managerial subjects for those already established in industry including KITI graduates, other small industrialists, supervisors or trained craftsmen. These courses of 2 to 4 weeks duration, may be conducted either at KITI, or in some other suitable place as may be found convenient.

5.6.2 These courses, as suggested earlier also, could be conducted by the Project Consultancy Division in subjects like, cost accounting, inventory control, quality control, productivity, factory layout, etc., which are not covered by other training institutions or for which the demand exceed the present capacity.

5.7 Proto-type Development

5.7.1 In addition to organisation of institutional training programmes for development of entrepreneurs, one of the important functions assigned to KITI is to develop prototype of new products, tools and equipment specially suited for use in rural areas of Kenya including that for handicraft industries. This would involve field study of requirements for appropriate tools that need to be developed, arranging their field trials, and finally production of a certain number for introduction and adoption in rural areas.

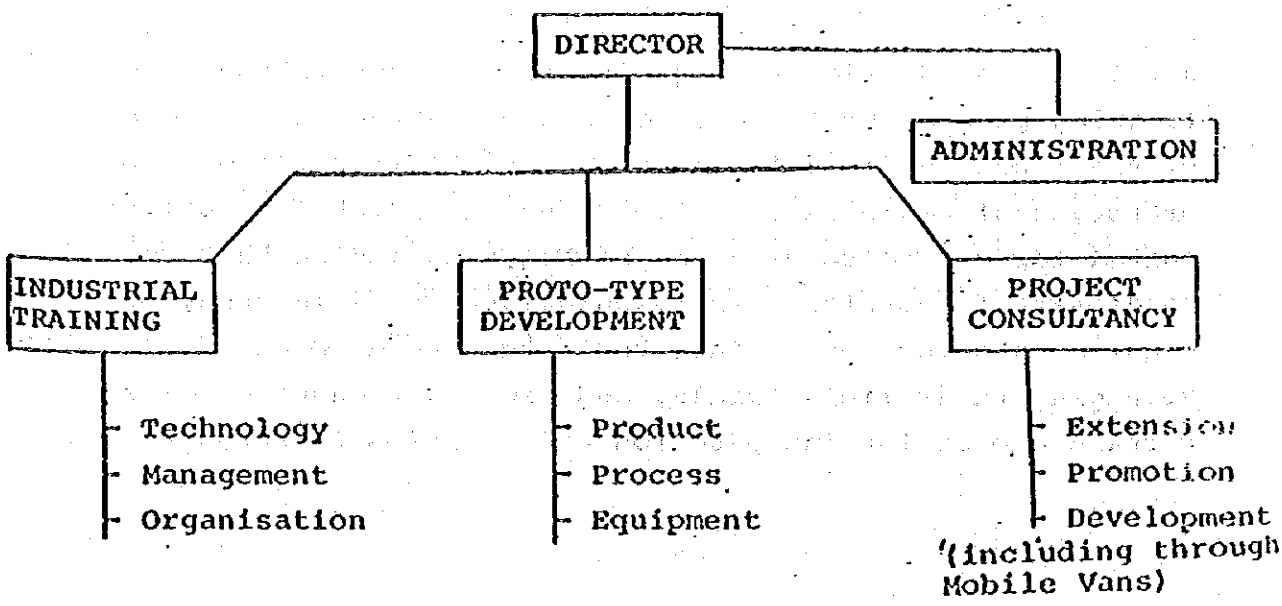
5.7.2 In course of time, it should be possible to select some imported equipment for which there is local demand and also scope for local manufacture. Such equipment, to the extent necessary, could be redesigned to suit local requirements, availability of raw materials and/or material standard specifications.

5.7.3 Along with development of proto-type tools and equipment, it would also be necessary to undertake training of some selected small entrepreneurs or industrialists who may be interested to take their manufacture on a regular commercial basis. In this regard, KITI could function as a Proto-type Production and Training Centre (PTC), a concept successfully adopted by a few developing countries, to accelerate local production of equipment and machinery hitherto obtained from abroad and specially such that lend itself to production in small industrial sector.

5.8 Functional Organisation

5.8.1 Keeping in focus the three distinct functions, viz., industrial training, project consultancy and prototype development, the internal organisation of KITI is visualised to be as follows:

FUNCTIONAL ORGANISATION



5.8.2 The proposed Industrial Training Division would conduct regular programmes with the help of the Consultancy Division specially on vocational guidance and general management subjects. Practical workshop experience would also draw on the work generated in the Proto-type Division. Short-term courses could be organised by the Consultancy Division with assistance of the Training Division. They would also collaborate with the Prototype Development Division to select topics on which work could be undertaken. The Consultancy Division will watch the progress of trainee from the day he gets in or even during selection and follow him through the training period and take him under their direct charge once he graduates. The Division would also assist the existing units in dealing with their technological problems through Mobile Vans having machinery for selected rural industries.

5.9 Number of Trainees

5.9.1 At present, the capacity of KITI is limited to 120 trainees a year - each of the 8 sections being able to accommodate about 15. It is proposed that the number be increased to 300, divided into the following sections:

Industrial Sections			No. of Seats
i)	Mechanical Engineering	..	40
ii)	Electrical Engineering	..	40
iii)	Automobile Engineering	..	40
iv)	Wood Working Industry	..	40
v)	Plastic Industry	..	20
vi)	Leatherwork Industry	..	40
vii)	Ceramics Industry	..	30
viii)	Textile Industry	..	40
ix)	Jewelery & Watch Repairs	..	10
	TOTAL	..	300

5.9.2 Those admitted to any of the above courses would be trained generally on all aspects of industry falling in the group, but before they graduate, they would have acquired specific and more detailed knowledge about one of the specialised fields in each group referred to earlier.

5.9.3 The staff and other requirements being suggested in the following sections are based on the ultimate strength of seats recommended above for different sections.

5.10 Personnel Requirements

5.10.1 Industrial Training Division: Besides a Deputy Director in-charge of this Division, there would be three categories in each of the sections of what may be called as Industrial Training Offices. The top man (I.E., Category I ITO) should be sell-versed in the particular industry, whereas his No. 2 (i.e., ITO Cat. II) should be responsible for factory management topics and No. 3 (ITO Cat IV) should be technologists to help the trainees in upgrading their skills in production of goods.

5.10.2 The following is an indicative list of staff requirements for this Division:-

Section	Categories I	II	III	Total
1. Mechancial Eng.	1	2	5	8
2. Electrical "	1	1	4	6
3. Automobile Eng.	1	2	5	8
4. Wood working	1	2	3	6
5. Plastics	1	1	2	4
6. Leather-works	1	1	2	4
7. Ceramics	1	1	2	4
8. Textile	1	2	3	6
9. Jewelery & Watch repairs	1	1	2	4
	9	13	28	50
Superneumery	1	2	2	5
	10	15	30	55
Store helpers, etc.				5
Total				60

5.10.2 Prototype Development Division: It is recommended that the Deputy Director in-charge of the Division should be assisted by:

Workshop Superintendent	1
Designers	4
Supervisors, Senior	5
" Junior	5
Total	15

5.10.3 Project Consultancy Division: The following staff should work under the charge of a Deputy Director:

Industrial Engineer - General Management 1

		Senior	Junior
Industrial Eng.	Production Management	1	1
" "	Marketing Management	1	1
" "	Financial Management	1	1
	Cost accountant	1	1
" "	Productivity	1	
	Total	10	

5.10.4 The technical staff at KITI would, as per details given above, be (60 + 15 +10) = 85, in addition to the Director and 3 Deputy Directors. In addition, 10 to 12 technical personnel (Extension Officers) would be required to assist the graduates in the establishment of industry and in their production work, making a total strength of about 100.

5.10.5 In a regular course, on an average, there would be about 1500 hours of work roughly divided as follows during a year:

		(Hours)
a)	Theoretical & practical work	
	i) For skill upgrading/application..	800
	ii) Management	300
b)	Factory visits	80
c)	Factory practical work experience ..	120
d)	Area study	100
e)	Preparation of feasibility project reports	100
	Total	1,500

5.10.6 The training officers would spend about 500 hours in visiting the graduates to follow their work and get a feed back and also carry out studies in some selected industries and areas as per a pre-arranged programme, so that as a group, the Training Division keeps itself abreast with the developments in various districts in the country, besides their individual specialised fields.

5.10.7 The personnel to provide training in management in the Consultancy Division would devote roughly 1/3rd of their time in dealing with management topics in regular courses, about another 1/3 in organising and conducting short-term courses and the remaining time in collecting materials and preparation of case studies.

5.10.8 The statement at Appendix B shows the total staff requirements, indicating the positions that may be filled in by the existing staff and those for which new personnel would have to be recruited, at an annual additional expenditure of about K£100,000.

5.10.9 In respect of the existing staff, it is visualised that the Principal would arrange a re-orientation programme before the new system is adopted and also deputé in batches some of them as required for specialised training in the country and abroad. There would also be need for provision and arrangement for continuous upgrading of the technical and other knowledge of the staff to keep them up-to-date about their own subjects and relevant developments in the country.

5.11. Equipment & Tools: The Appendix C gives details of the main machinery and equipment required for each section including the present position of the existing ones and the new equipment which would need to be purchased. Attempt has been made to ensure that there is no duplication of equipment, except where it is absolutely necessary between various sections. The workshops of the Divisions for Training and Prototype Development are expected to work in cooperation with each other. This healthy interdepdence would reduce the incidence of idle equipment although such a situation in a training and development establishment cannot completely be avoided. The cost of additional equipment is estimated at K£ 0.7 million.

5.11.1 Common Services Facilities: The workshops in the Training and Prototype Development Divisions would provide certain services required by small industries for repairs and testing of materials, production of zigs, fixtures, tools, dies etc., (including their design) and such other services

for which the units may not have facilities in their individual workshop on account of either their cost, lack of sufficient work to engage a machine and/or lack of skills and facilities, such as, electroplating, machining, heat treatment, etc. Such work would be undertaken on cost basis and treated as a common facilities service to the industry, specially the small scale sector.

5.11.2 In order to assist existing small industrial and handicrafts industries concentrated in different areas, it is recommended that KITI should have a few Mobile Vans equipped with machinery, equipment and tools suitable for selected rural industries. These Mobile Vans could visit these areas from time to time to demonstrate the use of such equipment and tools and also information on the facilities available for obtaining these on lease terms and assisting them in dealing with their technological problems.

5.12 In the context of the new role recommended for KITI including additional staff and activities, it will be desirable if an Advisory Committee is constituted for KITI to review the activities periodically and render advice and guidance to the Principal of KITI. The proposed Advisory Committee may include, among others, the representatives of the Ministries of Industry, Finance and Planning, Directorate of Personnel Management, financial and banking institutions including the Joint Loan Board and the UNIDO.

5.12.1 Keeping in view the new functions, the name of KITI may be changed to Kenya Industrial and Entrepreneural Development Institute, Kenya Industrial and Entrepreneurial Training Institute or Kenya Informal/Small Industries Service Institute. It may perhaps also be appropriate to change the name of the KIE to Kenya Informal/Small Industries Corporation.

5.13 Budgetory Estimates

To sum up, the total financial requirements are estimated as follows:

		Estimated K£ ('000)
A.	Capital Expenditure	
1.1	Machinery (new and replacement)	655
1.2	Major Repairs ..	5
1.3	Equipments, tools etc. ..	20
1.4	Furniture fixtures ..	20
		700
2.	Buildings (including workshops, classrooms, administration block, Hostels, Recreational facilities, Library, and staff quarters) as per M.O.W. initial estimates	3,200
B.	Initial Training and up-grading of staff	173
		4,073
C.	Recurrent Expenditures (Annual)	
1.	Staff Establishment	
1.1	Professional staff	127
1.2	Supportive & Administrative staff	45
		172

		£ ('000)
2.	Training Expenses	
2.1	Materials (including books and training materials) ..	60
2.2	Catering ..	30
2.3	Educational Tours & factory visits	3
		93
3.	Staff Development	
3.1	Staff development programme (Courses of Training)	5
4.	Country visits and extension work	5
5.	Research & Development	50
6.	Other Expenses	5
	Total Recurrent Expenses	330

CHAPTER VI

FOLLOW-UP PROGRAMMES FOR GRADUATES

6. TYPES OF ASSISTANCE REQUIRED

6.1 The main difficulties and problems normally confronted by small entrepreneurs particularly in the rural areas have been discussed in some detail in the preceding chapter. Taking these into account, it is considered that most of them require assistance mainly for the following purposes:

(i) preparation of feasiblity project reports;

(ii) obtaining credit facilities;

(iii) allotment of industrial plots and sheds;

(iv) obtaining licences, permits, etc.;

(v) purchase of machines, equipment, raw materials and spare parts;

(vi) dealing with technological problems;

(vii) repair and other service facilities;

(viii) marketing of products, and

(ix) management including maintence of accounts, etc.

6.2 It is to promote and provide such assistance to small entrepreneurs that several developing and even a few developed countries have taken policy/statutory and other measures to develop small industries, enterprises and business. The need for providing industrial extension services to small entrepreneurs particularly in rural areas has been stressed also in the current Development Plan 1979-83. A scheme for setting up rural service centres

was also prepared some time in the Kenya External Trade Authority. The facilities already available in Kenya for such purposes are briefly reviewed below. Keeping in view the background of the KITI graduates, the Committee is of the view that most graduates will require a "package of assistance", starting from the preparation of project reports to the establishment and running of the projects.

6.3 Feasibility Project Reports: The main agency which undertakes preparation of project reports for setting up small industrial units is the Kenya Industrial Estates (KIE). Their fees for preparation of such a report is 1% of the total cost of the project; their charges for only appraisal of a project report submitted to it are ½% of the total cost of the project. However, it is considered that the average size of the units likely to be set up by the KITI graduates would be much smaller than those for which project reports have been prepared so far by the KIE.

6.3.1 It has been recommended earlier that the training in KITI should include a short course on the preparation of feasibility reports and all trainees wishing to set up small informal industries should be provided with guidance about the types and size of industries to be set up in the areas to be selected by them and also assistance for preparation of detailed project reports. Such advisory services including preparation of project reports should be provided by the proposed new Project Consultancy Division of KITI referred to earlier.

6.3.2 Credit Facilities: At present, most banking and financial institutions are catering to the credit needs of medium and large scale industrial undertakings. Further, even some of the institutions having special schemes for assisting small industries (like the Industrial Development Bank and the Kenya Commercial Bank) are looking after the

modern small scale industrial sector, as distinguished from the small informal industrial sector comprising cottage, household and small proprietory and partnership units functioning in temporary structures or workplaces. In fact, as pointed out earlier, until these entrepreneurs are able to move to permanent workplaces, they are unable to obtain the trade licences to carry on their businesses and, without the licences, they are not considered eligible for loans by any bank.

6.4.1 At present, the KIE is the main institution which can provide credit to the informal sector. Since recently, the Development Finance Company of Kenya has also initiated a scheme for advancing loans to small industries including the informal sector. However, in practice, the KITI graduates and other prospective entrepreneurs wishing to enter the informal sector have not been able to avail of the loan assistance from these institutions to any appreciable extent owing mainly to their inability to raise resources upto the minimum limit stipulated by them as the entrepreneurs' own monetary contribution.

6.4.2 It will be observed from the following figures that the terms and conditions for advancing loans vary from institution to institution:

	KIE	DFCK	KCB
Entrepreneurs' contribution	15%	10%	25%
Rate of interest	10-11%	8-11%	10½%
Period of repayment	5-10 yrs.	5-8 yrs.	8 yrs.

Almost all the graduates of the KITI that the Committee was able to m-et, had expressed their inability to raise resources upto even 10 percent of the total cost of the projects to become eligible for loans from the financial institutions. The heads of various training institutions in the country who have the knowledge about the economic background of their own students, were also of the view that it was not possible for them to furnish the minimum amounts stipulated by the financial institutions. On the other hand, the representatives of the financial institutions were of the view that an entrepreneur should have some stake in his project and, therefore, he should contribute a reasonable amount towards the cost of the project.

6.4.3 This matter has been carefully considered by the Committee. The Committee is in general agreement with the principle that an entrepreneur should have some stake in his project. But the Committee is also of the view that an entrepreneur's stake need not necessarily be in the form of financial resources. Moreover, institutional credit should be available not only to those who have their own financial resources, but also to those having specialised skills, managerial capability and economically viable projects for becoming self-employed. As pointed out earlier, the Government has been spending about K.Shs 20,000 per trainee in KITI but the objective of this training to assist the trained personnel to become entrepreneurs or self-employed, is not being achieved since the trained persons are not able to raise the resources of the required order to avail of the institutional credit.

6.4.4 In order to resolve this problem the Committee recommends that KITI graduates wishing to be self-employed may, if necessary, raise 15 percent of the cost of a project not exceeding K.Shs 20,000 as "risk capital" in the form of long-term loans from the Joint Loans Boards, or obtain equipment and tools (required for the trades in which trained) subject to the same ceilings, on lease terms from KITI, so that they could obtain the balance of their credit requirements from the financial and banking institutions for setting up their viable industrial units. Assuming that equipment and tools would be needed for about 300-350 graduates of the KITI over the next four years of the Plan period, a total sum of about K.Shs 6-7 million would be required, which could be provided out of the total outlay of K.Shs 50 million made for the development of informal and small industries under the current Development Plan 1979-83.

6.4.5 The Committee is also of the view that steps should be taken urgently to formulate:

(i) a special liberal scheme for advancing loans to informal and small industries, and

(ii) another scheme for credit guarantee for loans given by commercial banks to small and informal industries.

The main objective of the special liberal scheme for informal and small industries should be to make avilable small loans on easy terms and conditions to selected entrepreneurs like KITI graduates and other technically qualified persons with economically viable projects. This proposed scheme may be formulated and launched by, say, the Kenya Commercial Bank, which has the largest number of branches all over the country and has also acquired experience in administering the existing scheme for credit facilities to modern small scale industries. Such a scheme will have to be supported by a scheme for credit guarantee

for loans to informal industries by commercial banks, as envisaged under the current Development Plan. Such a scheme can be initiated on a pilot basis by creating a small Guarantee Fund to provide gurantee cover upto 75-90% of the amount in default, or the amount guaranteed, whichever is less. The Fund can be augumented by charging a nominal guarantee fee (say, one quarter of one percent per annum) on loans upto specified ceiling for which the guarantee is invoked by approved commercial banks. It would be desirable to take steps to formulate detailed schemes for both the purposes on an urgent basis.

6.4.6 Instead of taking loans, some entrepreneurs prefer to obtain machines and equipment on loan basis. For this purpose, the DFCK has nearly finalised a scheme in collaboration with local dealer in machines and equipment to supply these to small entrepreneurs on lease terms. The scheme envisages the dealers to arrange training in the use of machines to be leased to small entrepreneurs. The Government may also consider initiating such a scheme for small entrepreneurs.

6.5 Industrial Plots and Sheds: Besides credit, most entrepreneurs require assistance in securing a plot or a ready-made shed having the basic infra-structure facilities like electricity, water, etc., for starting a small industry. So far, assistance in this respect has been provided by the KIE through its programme for construction of ready-made factory sheds and workshops in the Industrial Promotion Areas and Rural Industrial Development Centres.

6.5.1 It is gratifying that the Kenya Government has recently laid down certain important guidelines for assisting entrepreneurs in getting possession of plots for setting up industries. These guidelines envisage direct allocation of industrial plots by the concerned authorities in the following circumstances:-

(i) Where a project has been approved by the Government's New Projects Committee;

(ii) where a small scale industry sponsored by an African entrepreneur is approved (a) for investment and supported by the KIE, and (b) for investment by the Boards of Directors of the ICDC, DFCK and IDB.

The guidelines also envisage not only preparation of a detailed list of land available for industrial purposes in all towns (other than Nairobi and Mombasa) and significant market centres in the rural areas, but also development of adequate infra-structure services and facilities in the designated industrial areas. It is assumed that action has been initiated to implement these guidelines.

6.6 Permits and Licences: Prior to starting a small industry, entrepreneurs have to obtain several permits, licences and clearances from different authorities concerned with construction of buildings, public health, trade, electric connection, supply of water, sales tax, excise duty, etc. It is envisaged under the current Development Plan that the local authorities will review the building and health regulations so that they clearly distinguish between those activities which are potentially harmful because of unsafe and unhealthy working conditions, pollution, etc., and those which are merely unaesthetic or untidy. The Committee recommends that these and other regulations may be reviewed and streamlined as early as possible so that the procedures are simplified and delays are avoided. It will be desirable to publicise the amended rules, regulations and procedures.

6.6:1 It has been recommended earlier that a booklet may be prepared for the guidance of small entrepreneurs, containing detailed information and forms required for starting an industry including the names and addresses of the concerned authorities, etc. It is necessary that work on the preparation of this booklet should commence early. However, apart from this booklet, some entrepreneurs may still require assistance to pursue these matters with the appropriate authorities. The Committee is of the view that such assistance, whenever required, should be provided by the Project Consultancy Division of KITI recommended earlier.

6.7. Purchase of Machines, Equipment, Raw Materials and Spare Parts: It has already been suggested that arrangements may be made for supply of tools or advancing of "risk capital" upto K.Shs 20,000 per graduate and also for supply of machines and equipment on lease terms. At the same time, the Project Consultancy Division referred to earlier, should also provide information to the graduates and others about the manufacturers/importers of machines, equipment, raw materials and spares, together with the prices, etc. Further, as suggested earlier, the Division through its mobile vans should also provide information to the units concentrated in different places regarding the use of improved equipment and tools and assist them in dealing with their technological problems.

6.8 Technological Problems: Almost all entrepreneurs, small medium and large, are confronted from time to time with a variety of technological problems such as those arising from break-down of the plant and equipment, non-availability of raw materials of good quality, designing of new products, etc. It is essential that technical advice on such problems should be available to informal units. Such advisory services should be provided by the Project Consultancy Division including its Mobile Vans.

6.9 Repair and other Service Facilities: A number of small entrepreneurs frequently require certain services which they on their own cannot afford, e.g. welding, heat treatment, electroplating, machining, making small parts required for repairing the plant and equipment, etc. At present, such common service facilities are available through the workshops set up by the KIE. As suggested earlier, KITI should also provide such facilities to small units on nominal charges.

6.10 Marketing: A reference has been made in the earlier section 3.3 to the role of the informal and small sector in the development programmes for several specific industries outlined under the Development Plan 1979-83. This broad demarcation of the fields of production as between the organised and informal sectors would help in marketing the products of the informal sector. However, besides this, detailed studies need to be undertaken about the potential for the development of some seledted industries in the informal and small scale sector. Prima facie, it is technologically feasible and economically viable to produce a number of articles in the informal and small scale sector, based largely on local resources and skills. A study for identification of such industries further development of which can be reserved for the small sector, appropriately falls within the purview of the Industrial Survey and Promotion Centre.

6.10.1 The Committee is also of the view that the quality products of the genuine informal sector deserve to be accorded a suitable price preferences of about 10-15% over the products of the organised sector in purchases by the Government for its own use in different Departments.

6.11 Management Including Maintenance of Accounts, etc.: Assistance is required by most small entrepreneurs in management of their units including maintenance of accounts cost analysis, submission of returns for income and other taxes, etc. Such assistance should be available from the proposed Project Consultancy Division.

6.12 In order to administer the Committee's recommendations and suggestions and also to keep a watch over their implementation, it is considered essential that the Programming and Evaluation Section for informal industries envisaged under the Development Plan, should be established urgently. The main functions of the Section may include:

a) formulation of policy measures,

b) formulation of detailed schemes for development and promotion, and

c) evaluation of progress and impact of the policies and schemes.

There is also need for establishment of Informal Small Industries Development Offices at the Provincial and most District levels which could collect data and information about these industries which are essential pre-requisites for formulation of development programmes and schemes and also for arranging assistance and facilities for them to utilise their production capacity fully, expand and diversity their production, etc.

CHAPTER VII

7. MOBILISATION OF RESOURCES

7.1 Finances

7.1.1 As per details given in Chapter V, the capital requirements for the reorganisation of KITI would be of the order of K£ 0.7 million, excluding funds for the construction of additional buildings that are reported to have been already provided for. The annual recurring expenditure would need to be raised from the present provision of £160,000 to about £330,000. A part of this, upto 20% may be recovered by way of revenue from sale of products and services by KITI.

7.1.2 Adequate budgetary provision both for capital and recurring expenditure would need to be made out of appropriate allocation in the Development Plan. If considered necessary and advisable, bilateral or multi-lateral aid through UNDP could perhaps be negotiated.

7.1.3 The Chapter VI has brought out the need for supply of tools or advance of "risk capital" to the extent of K£ 0.3 to 0.35 million for the remaining Plan period. A sum of K£2.5 million has been provided in the Plan for developing informal and small industries. A portion of this amount could appropriately be utilised for the supply of tools.

7.2 Personnel

7.2.1 The need for retraining of existing staff members and recruitment of new ones have been outlined in Chapter V. It is unlikely that all the persons with suitable

qualifications and experience would be available locally in required numbers. It would, therefore, be necessary to recruit the best available material and arrange for their training on the job. Assistance in this regard could usefully be had through UNIDO country programme (third circle), as per broad details given below.

7.3 External Assistance

7.3.1 The UNIDO Programme for Kenya (Third Circle) included tentatively a token provision of U.S. $ 530,000 for assistance to KITI. "Rural Service Centres, during the period 1979-83. However, the UNIDO Assistance could be asked for the new programme initially for a period of, say, 3 years towards:

a) additional equipment,

b) fellowships for training of faculty members,

c) international consultants, and

d) training aids, library and transport vehicles.

7.3.2 The proposed UNIDO team should include:

a) Team Leader: A Senior Industrial Engineer/Economist to assist in design and development of short and long-term programmes and coordinate the activities of training, consultancy and prototype development.

b) Industrial Engineer: To assist in the development of course contents and training of faculty members.

c) Management Consultant: To assist in integrating the technological content of the training with development of factory management talents and identification of projects and their formulation.

d) Industrial Engineer/Economist: (Extension) for development of extension and consultancy services.

e) Mechanical Engineer: to assist in design, development and prototype production of products, tools and equipment suitable for rural areas in Kenya.

Selection of the three Industrial Engineers/Economists at (a) (b) and (d), should be such that between them, they could cover different sub-sectors of the industry.

CHAPTER VIII

7. STEPS FOR IMPLEMENTATION OF THE RECOMMENDATIONS

7.1 The major conclusions and the recommendations of the Committee are discussed in detail in the preceding chapters and also summarised in Chapter II. With a view to facilitate their expeditious implementation, the main recommendations are broadly classified into the following three categories:

Category I — those not involving major financial commitments, large additional staff or policy issues;

Category II — those involving major financial commitments and also additional staff but not policy issues; and

Category III — those involving major financial commitments, additional staff and also policy issues.

Action on the recommendations under the category (I) above can be taken straightaway.

7.1.1 It may be noted that most of the recommendations are inter-connected. It would, therefore, be desirable if all the recommendations are processed and considered at the same time. It needs hardly be stressed that implementation of the recommendations following particularly under the last two categories involving selection of qualified faculty members, purchase of machinery and equipment, construction of new buildings, negotiations for foreign aid, etc., would take considerable time. It is, therefore, essential that decisions on the recommendations are taken as early as possible.

8.1.2 The main recommendations falling under different categories are briefly recapitulated in the following paragraphs.

8.2 Category I: Recommendations not involving major financial commitments, large additional staff or policy issues.

8.2.1 Overhauling of the Present Machines and Equipment: This activity is already being undertaken at KITI, but it will be intensified through the existing consultancy arrangement with the Industrial Research and Consultancy Unit (I.R.C.U.) of the University of Nairobi. The Unit is assisted by the UNIDO. The present joint arrangements are preferred since KITI staff gets involved in the exercise and gains experience for future work.

8.2.2 Staff Development: Staff training is a vital element for the success of the KITI programme. Training for changing attitudes and for motivating present faculty staff in the field of entrepreneural development and prototype development can be started straight away with some assistance from other Government organisations. The Principal can organise talks and lectures for staff and trainees to be offered at KITI by notable experts in the field of entrepreneural development. The following Government and other organisations may be involved in these talks and lectures perhaps, once a week for two hours at a time:

(i) Ministry of Industry

(ii) Ministry of Economic Planning

(iii) Directorate of Personnel Management

(iv) Industrial Survey and Promotion Centre

(v) Kenya Industrial Estates

(vi) Kenya External Trade Authority

(vii) I.C.D.C., D.F.C.K. and Joint Loan Board, Kisumu

(viii) U.N.I.D.O.

(ix) Council of Science & Technology

(x) University of Nairobi, IRCU

(xi) Kenya Bureau of Standards

(xii) K.I.R.D.I.

These organisations could form the extended faculty referred to in the report. Other interested organisations from the private sector could also be involved in this major orientation programme for KITI staff.

8.2.3 The Principal has already made arrangements with K.T.T.C. for training of the staff at KITI and most of them now have obtained K.T.T.C. Certificate "C". The K.E.T.A. has also been involved in giving lecutres to KITI staff and the Chairman of the Committee has already started with an orientation lecture for the staff which should be continued. More exposure to the field conditions should be arranged to make staff members aware of the economic situation in the country. Other staff training programmes may require overseas arrangements, which should be organised later.

8.2.4 Preparation of a Booklet on Informal, Small and Rural Industries: In order to guide the prospective entrepreneurs, it is essential to have a booklet containing the Government's policies for the development of informal small and rural industries and also details of the facilities available to assist them in setting up these industries, the procedures to be followed, etc.

8.2.5 Selection of Trainees: At present, interviews are organised by the Principal in various parts of the country to ensure proper selection from the applicants who respond to newspaper announcement of vacancies at KITI. It is proposed to utilise also the services of radio, television, and radio officers to publicise the training programmes. The Principal will also start a programme of "batting average" so as to collect relevant data for selection of more suitable trainees for future courses.

8.2.6 Reorganisation of Syllabi: The syllabi at KITI needs to be re-organized to reflect industry-oriented training, instead of skill formation training. The syllabi will be prepared by KITI instructors as in the past with the guidance of the Principal and an expert. The services of an expert could be requested from the UNIDO or some other suitable organisation as part of Technical Assistance to Kenya for a short term of, say, six months.

8.2.7 Factory and Area Visits by Students: The students at KITI would be exposed to as much of the actual workshop situations as possible. A programme of in-plant training for students will be worked out as soon as possible with the assistance of the KIE, association of industries and others. Further, area visits to enable students to gather data required for their future industrial projects will also be arranged with the assistance of the K.I.E. and others. This may require some provision of funds for the upkeep of the students, which may be allocated from the National consolidated funds in the normal manner.

8.2.8 KITI Workshops to be Patterned as Commercial Industrial Units: In order to offer a simulated training situation, it is important that KITI workshops are run as much as possible on the lines of commercial industrial

units. This would give the trainees the practical approach, which is the essence of entrepreneural development. The current workshops can be re-organized gradually to accept more job work from industries to the extent that funds for materials allow. Some of such work is already being done at KITI, which could be now expanded. Efforts would be made to recover about 20-25% of the annual recurring costs through sales of products and services rendered by KITI to private parties with the help of the trainees.

8.3 Category II: Recommendations Involving Major Financial Commitments and Additional Staff but not Policy Issues.

8.3.1 Additional Staff for KITI: The Committee has endorsed a scheme prepared by the Principal for strengthening the staff of KITI. In order to increase the training capacity from 120 to 300 trainees a year, the Committee has also recommended 3 new posts of Deputy Directors and some 85 new positions for the proper implementation of this report, including 60 additional training officers, 15 new posts for extension officers and 10 new posts for prototype development officers.

8.3.2 Constructing New Building: Because of physical congestion at the present site and in order to expand the training facilities, plans have been made to relocate the training activity to a new and large site within Nakuru township. A plot of 20 acres has been allocated for this purpose. The Ministry of Works has, however, estimated that another 20 acres will be needed to take care of further growth. The cost of construction is estimated as K£ 2.2 million. A part of it (K£0.506) has already been earmarked for the construction in the 1979-83 Development Plan.

8.3.3 The Committee urges that construction be started early and that additional land required may also be obtained. When construction is completed, the present site of KITI could be used as the Prototype Development Division of the Institute.

8.3.4 Preparation of Product Profiles: With some assistance from international experts, product profiles should be prepared by the new staff soon after their recruitment. These ready-made-projects will induce many trainees to go for self-employment. The profiles will cover products in the sub-sectors covered by the training courses at KITI. Subject to a detailed study by the ISPC, some of these industries may be reserved for rural areas.

8.3.5 Vocational Guidance: Although some vocational guidance is provided by the technical instructors, effective results will be possible when personnel and more data and information are available. The staff for this service will be a part of the Project Consultancy Division.

8.3.6 Credit Facilities - Risk Capital, Supply of Tools, Credit Guarantee Scheme and Supply of Machines on Lease Terms: It has been recommended that either "risk capital" or equipment and tools upto K.Shs 20,000 be supplied to the graduates. An initial amount between KE300,000 to KE350,000 may be needed for the purpose. The Committee urges speedy constitution of the fund from the KE2.5 million already provided in the Development Plan for the development of informal and small industries. Details of schemes for credit facilities and Credit Guarantee and supply of machines on lease basis need to be worked out.

8.3.7 Preparation of Bankable Projects for Trainees: After a trainee has made provision for the "risk capital" either through his own savings or through the Joint Loan Board, it is necessary for him to prepare a bankable project report for obtaining institutional loan. The staff of Project Consultancy Division will provide the required assistance.

8.4 Category (III) Recommendations Involving Major Financial Commitments, Additional Staff and Policy Issues

8.4.1 Technical Assistance: It is essential that request for technical assistance in terms of personnel be made as early as possible to international and other organisations. The types of technical personnel required have been described in the report, but these details could be negotiated during the application for the assistance. It is important to get this assistance as quickly as possible since these experts will be also needed for training of the local staff on the job.

8.4.2 Training of Local Personnel Abroad: To prepare the local staff well for the new activities, it will be necessary to train some of them abroad. Details of training required can be worked shortly for submission to international and other organisations.

8.4.3 Assistance for New Machinery, Mobile Vans, Training Aids, Transport and Library: Applications for assistance for new machinery, mobile vans, training aids, transport and library can be prepared shortly. The total assistance required will be in the region of KE 0.7 million.

8.4.4 Setting-up of Project Consultancy Division: After foreign technical assistance has been assured in terms of personnel, the Project Consultancy Division can be started.

Full staffing of the Division will be possible when the new building has been completed. The Division will be used also for providing "package of assistance" to graduates.

8.4.5 Setting-up of Prototype Development Division Assurance of foreign technical assistance is required before setting up the Division. Some prototype work is, however, carried on at present which can be increased in future, but full operation of the Division will require new establishments and completion of the new building.

8.4.6 New Technical Courses: The Committee has recommended some new technical courses which can be introduced when the construction of the new building is finished.

8.4.7 Increasing Number of Trainees: As soon as the Institute is able to move to its new building, the number of trainees will be increased upto 300.

8.4.8 New Institutes: It is necessary that steps are taken soon for starting two or three new Institutes like KITI.

8.4.9 Short-term Courses: It would be possible to introduce these courses when additional staff is in position.

8.4.10 Establishment of Programming & Evaluation Section for Informal and Small Industries: An early decision on this recommendation is required for realising the objectives and targets for the sector envisaged under the Current Development Plan 1979-83.

Prof. A.D. Bohra F.I.E.	-	Chairman	_____
Dr. A.D. Monteiro	-	Member	_____
Mr. N.G. Mwai	-	"	_____
Mr. S.E. Joseph	-	"	_____
Mr. H. Bekker	-	"	_____
Mr. D.L.A. Ochieng	-	"	_____

March, 1980

/NS

Appendix A

ILLUSTRATIVE LIST OF INDUSTRIES AND SERVICES FOR RURAL AREAS

(Excluding Handicrafts)

A - ENGINEERING INDUSTRIES

1. Mechining and Fitting

Trolleys
Hand tools
Agriculture tools
Bolts, nuts, screws, nails, washers
Oil crushers
Concrete mixers
Machine parts (spares)
Hand pumps
Wheel barrows
Transport and lifting equipment
Windmills
Repair and maintenance shop.

2. Foundry

Manhole covers and other sanitary requirements
Weights
Rainwater and drain pipes.

3. Sheet Metal Fabrication and Products (including servicing)

Barbed and stranded wire
Streetlighting fixtures
Boxes and cabinets
Barrels, drums, bins, buckets
Trays, racks
Shoe tacks and eyelets

Fasteners
Doors, windows
Furniture
Beds
Locks
Building hardware
Gates
Charcoal ovens, barbecue grills
Drain water pipes
Cutlery
Safety pins
Steel wools
Hairpins
Bicycle frames, forks
Snap buttons
Storage tanks
Poultry feed equipment
Hot plates
Cookers
Waterheaters
Seats for buses and trucks
Roof racks
Handles
Bicycle lamps
Other bicycle parts
Car parts (sheet metal)
Irrigation equipment

4. Electrical and Electronics (including installations and servicing)

Electrical installations
Alarm equipment
Transformers
Equipment repair

5. Automobiles, motorcycles and tractors (servicing, removing of dents and spary painting)

B - NON-ENGINEERING INDUSTRIES

6. Wood Products (including paper)

Sawmills
Crates, pellets
Tea chests
Cables drums
Poles
Handles
Furniture
Parquet flooring
Storage racks and cupboards
Kitchen units
Partitioning
Cogs
Windmills
Drawing boards
Paper bags and cartons
Envelopes and exercise books and stationery
Drinking straws
Book binding
stickers
Paper mache
Pencils
Brushes
Toys
Prefabricated building components
Saw dust briquettes
Charcoal

7. Textiles (knitting and garment making)

Garments and similar products, including repairs.
Nets
Cushions
Knitwear.

Pipes and fittings
Rain coats
Bottle caps
Wax candles
Paint mixtures
Polish
Soap
Matches
Glue
Fertilizer mixing

c - SERVICES

12. Plumbing (including sanitary works)

Equipment repair
Installation repair

13. Electroplating

Copper & silver

14. Packaging

Food products (e.g. salt, vegatbles) and handicrafts

Appendix B

PERSONNEL REQUIREMENTS

(Professional)

No.	Title	Total Estimate	Present	New Staff to be Recruited	Average Annual Salary
					K£
1	Director	1	1		2,712
2	Deputy Directors	3	-	3	6,462
3	I.T.O. I	10		10	15,606
4	I.T.O. II	15	8	7	23,690
5	I.T.O. III	30	8	22	25,740
6	Res. & Div. Officers	15	-	15	21,690
7	Consultancy Div.	10	-	10	17,340
8	Extension Officers	10	1	9	14,460
	Total	94	18	76	127,700

Cost of Equipment (new & repairs to existing as per details attached)

		K.£
1.	Mechanical Engineering Industry	
	a) Moulding and foundry works including pattern making	12,000
	b) Forging and metal fabrication	20,000
	c) Machining and fitting ..	35,000
	d) Metal finishing	30,000
	e) Plumbing	5,000
2.	Electrical Engineering ..	10,000
3.	Automotive Engineering ..	29,000
4.	Wood Working	10,000
5.	Leatherwork	6,000
6.	Plastic	120,000
7.	Ceramics	10,000
8.	Textiles	
	a) Garments making	3,000
	b) Weaving, knitting, dyeing and printing	30,000
9.	Jewelery & Watch Repairs ..	20,000
10.	Prototype Development ..	360,000
	Total	700,000

Appendix C

SECTION: MECHANICAL ENGINEERING INDUSTRY

SUB-SECTION: MOULDING AND FOUNDRY WORKS INCLUDING PATTERN MAKING (10 TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Sand Washer	1	1	-	
2	Sand Shifter	1	1	-	
3	Sand Mixer	1	1	-	
4	Sand Blender	1	1	-	
5	Stripper Moulding M/c	3	1	2	
6	Core Blowing Machine	1	1	-	
7	Tumbler	1	1	-	
8	Dust collector	2	2	-	
9	Sand Blast Chamber	1	-	1	
10	Bench Grinder	2	1	1	
11	Portable Electric Grinder	3	1	2	
12	Portable Disc Grinder	1	1	-	
13	Polishing Grinder	2	1	1	
14	Platform Scales	2	2	-	
15	Cupola	2	1	1	
16	Air Compressor	1	1	-	
17	Optical Pyrometer	3	1	2	
18	Oil Burner	3	1	2	
19	Crucible Furnace	2	1	1	
20	Fan Blower	3	1	2	
21	Drying Furnace	1	1	-	
22	Heavy Duty Drill	1	1	-	
24	Portable Electric Drill	3	1	2	
25	Mixer for Lab.	1	1	-	
26	Shieves shaker	1	1	-	

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
27	Sand strength tester	1	1	-	
28	Permeability tester	1	1	-	
29	Sand Rammer	1	1	-	
30	Polishing machine	2	1	1	
31	Metallurgical Micriscope	1	1	-	
32	Misc. Hand Tools	lot			
33	Wind Pressure Anemometer	1	-	1	
34	Dissolving Converter for light alloy	1	-	1	
35	Core oven	1	-	1	
	Total Cost of the Equipment including repairs of the existing machines	=	KE 12,000		

SECTION: MECHANICAL ENGINEERING INDUSTRY

SUB-SECTION: FORGING & METAL FABRICATION

(10 TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	High Speed Hacksaw Cutting M/C	1	-	1	
2	Heating Furnace	2	2	-	
3	Forging Press	1	-	1	
4	Portable Grinder	8	8	-	
5	Pillar Double Ended Grinding Machine	2	2	-	
6	Portable Polisher	1	1	-	
7	Dust Collector	1	1	-	
8	Shearing machine	1	1	-	
9	Gas Cutting Machine	1	1	-	
10	Copying Machines (Blue Prints)	1	1	-	
11	Bending Machine	1	1	-	
12	Bending & Rolling Machine	1	1	-	
13	Triple Roller	1	1	-	
14	Vibro Shear Machine	1	1	-	
15	Spot Welder	2	2	-	
16	Riveting Machine	3	3	-	
17	Rolling Machine	1	1	-	
18	Arc Welding Machine	5	5	-	
19	Welding Machine Gas	2	2	-	
20	Air Compressor	1	1	-	
21	Bench Type Drilling Machine	1	1	-	
22	Portable Electric Drilling M/c	2	2	-	
23	Pipe Setting Machine	1	1	-	
24	Weighing Machine	1	1	-	
25	Drawing Press	2	-	2	
26	Spinning Lathe	2	-	2	
	Total Cost of the Equipment including repairs of the existing machines	=	K£ 20,000		

SECTION: MECHANICAL ENGINEERING INDUSTRY

SUB-SECTION: MACHINING AND FITTING

(10 TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Hacksaw Machine	1	1	-	
2	Lathes	5	5	-	
3	Shapers	2	1	1	
4	Milling machines	2	2	-	
5	Drilling Machines	3	3	-	
6	Portable Electric Drilling Machine	1	1	-	
7	Grinders (Cutting & Tool)	4	4	-	
8	Surface Grinding Machine	1	-	1	
9	Cylindrical Grinder with Internal Attachments	1	-	1	
10	Weighing (10 tons Machine)	1	-	1	
11	Heat Treatment Furnace	1	-	1	
12	Gauge (Electronic)	1	1	-	
13	Capstan Lathes	1	-	1	
14	Broaching Equip.	1	-	1	
15	Measuring Tools etc.	lots			
	Total Cost of the Equipment including repairs of the existing machines	=	K£ 35,000		

Appendix C

SECTION: MECHANICAL ENGINEERING INDUSTRY

SUB-SECTION: METAL FINISHING (5 TRAINEES)

Serial No.	Particulars	No. of Machines			Remar
		Total	Existing	New	
1	Grinding M/c	1	-	1	
2	Polishing M/c	1	-	1	
3	Cleaning Bath	1	-	1	
4	Spray Painting Guns and Booth	1	-	1	
5	Dipping Bath	1	-	1	
6	Oil Fired Oven	1	-	1	
7	Infra-red Oven	1	-	1	
8	Electroplating Bath	1	-	1	
9	Motor Generator sets	1	-	1	
10	Buffing machine	1	-	1	
11	Anodising Unit	1	-	1	
12	Vacuum Metalizing	1	-	1	
13	Sheredizing Unit	1	-	1	
	Total cost of the equipment (new) =		KE 30,000		

Appendix C

SECTION: MECHANICAL ENGINEERING INDUSTRY

SUB-SECTION: PLUMBING (FIVE TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Pipe Cutting M/c	1	1	-	All needs to be replaced
2	Pipe Threading M/C	2	2	-	
3	Pipe Bending M/c	1	1	-	
4	Portable Arc Welding set	1	1	-	
	Total Cost of the Equipment replacement of the existing machines	=	K£ 5,000		

Appendix C

SECTION: ELECTRICAL ENGINEERING INDUSTRY

MACHINERY REQUIREMENT

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Electric Hand Drilling M/c	2	1	1	
2	Motor Generator sets	2	2	-	
3	Rotor Winding Equipments	5	2	3	
4	Bending Machines	5	5	-	
5	Motor, Single Phase	2	1	1	
6	Motor, Three Phase	2	1	1	
7	Blower	1	1	-	
8	Grinder	1	1	-	
9	Electric Oven	1	1	-	
10	Transformers	1	-	1	
11	Television set	1	-	1	
12	Tape Recorder	1	-	1	
13	P.A. System	1	-	1	
14	Electric Oven	1	-	1	
15	Iron, Electric	1	-	1	
16	Toasters & Other Electrical Household Equipment	lots			
	Total Cost of the Equipment including repairs of the existing machines	=	KE 10,000		

SECTION: AUTOMOTIVE ENGINEERING

MACHINERY REQUIREMENTS

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	A.C. Arc Welding Machines	1	1	-	
2	Arbor Press	1	1	-	
3	Armature Tester	1	1	-	
4	Boring Machine	1	1	-	
5	Brake Tester	1	1	-	
6	Brake Shoe Grinder	1	1	-	
7	Cylinder Honing Machine	1	1	-	
8	Car Washing equipment	1	1	-	
9	Duplex Head Grinder	1	1	-	
10	Distributor Tester	1	1	-	
11	Engine Analyser	1	1	-	
12	Pin Hole Honing Machine	1	1	-	
13	Battery Charging Machine	1	1	-	
14	Side Slip Testing Machine	1	1	-	
15	Speedometer Testing Machine	1	1	-	
16	Surface Grinder	1	1	-	
17	Valve Refacer	1	1	-	
18	Hydraulic Press	1	1	-	
19	Crankshaft Regrinder	1	-	1	
20	Metal Depositing M/C	1	-	1	
	Total Cost of the Equipment including repairs of the existing machines	=	KE	29,000	

Appendix C

SECTION: WOOD WORKING INDUSTRY

(MACHINERY REQUIREMENTS)

(40 TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Band Saw Machine	1	1	-	
2	Circular Saw	1	1	-	
3	Tilting Disc Saw	1	1	-	
4	Planer	2	2	-	
5	Planer & Thicknesser	1	1	-	
6	Hollow Chisel Mortizer	1	1	-	
7	Chamfering Machine	1	1	-	
8	Dovetail Machine	1	1	-	
9	Portable Electric Plane	1	1	-	
10	Portable Electric Plane for Grooving	3	1	2	
11	Router Machine	1	1	-	
12	Joining Machine	1	1	-	
13	Tenoning Machine	1	1	-	
14	Woodworking Lathe	2	1	1	
15	Fret Sawing Machine	2	1	1	
16	Portable Polisher	2	1	1	
17	Portable Sander	2	1	1	
18	Corner Locking Machine	1	1	-	
19	Dust Collecting Machine	1	1	-	
20	Booth for Painting with Suction Fan	1	1	-	
21	Duplex Head Grinding M/c	1	1	-	
22	Cutter Grinding Machine	1	1	-	
23	Electric Drill	2	1	1	
24	Automatic Saw Grinding Device	1	1	-	

SECTION: WOODWORKING INDUSTRY

(MACHINERY REQUIREMENTS)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
25	Roll (Distortion Remover)	1	1	-	
26	Fully Automatic Grinder Device	1	1	-	
27	Press for Extracting Teeth	1	1	-	
28	Do-All Machine	1	1	-	
29	Combining Press	1	1	-	
	Total Cost of the Equipment including repairs of the existing machines	=	K£	10,000	

SECTION: LEATHERWORK

(MACHINERY REQUIREMENTS 40 TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Leather Cutting M/c	1	-	1	
2	Skiving Machines	2	2	-	
3	Sewing Machines	10	6	4	
4	Upper Roughing Machine	1	1	-	
5	Bend Lasting Machine	1	1	-	
6	Sole Leather Splitting	1	1	-	
7	Welt cutting machines	1	1	-	
8	Welting Machine	1	1	-	
9	Innersole Channeling	1	1	-	
10	Edge Setting Machine	1	1	-	
11	Edge Brimming Machine	1	1	-	
12	Outsole Stitching Machine	2	2	-	
13	Grinding Machine	2	2	-	
14	Sole Pressing Machine	1	1	-	
15	Infrared Drying Machine	1	1	-	
16	Polishing Machine Blower	2	2	-	
17	Finishing Machine	2	2	-	
18	Sole Tester	1	1	-	
19	Cylinder Leather Sewing M/C	3	3	-	
20	Eyelet Machine	1	1	-	
21	Edge Folding Machine	1	1	-	
22	Shoe Stretcher	1	1	-	
23	Pattern Grading & Cutting M/C	1	1	-	
24	Handbag Flame Fitting M/c	1	1	-	
	Total Cost of the Machinery including repairs of the existing machines	=	KE 6,000		

SECTION: PLASTIC INDUSTRY

(20 TRAINEES)

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Injection moulding	2	-	2	
2	Hand moulding	5	-	5	
3	Blow moulding	2	-	2	
4	Plastic Extruder with Pipe attachment	1	-	1	
5	Film Printing M/C	1	-	1	
6	Thermal Sealing	2	-	2	
7	Equipment for Recycling of thermo-plastic waste material	1	-	1	
8	Film Cutting Machine	1	-	1	
9	Bag Forming machine	1	-	1	
	Total Cost of the Machinery =		K£	120,000	

Appendix C

SECTION: CERAMIC INDUSTRY

30 TRAINEES

FUTURE REQUIREMENT

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Disintegrator	1	-	1	
2	Mixing m/c	1	-	1	
3	Shieving m/c	1	-	1	
4	Pottery Wheels	4	-	4	
5	Moulding Spindle	4	-	4	
6	Firing Kiln	1	-	1	
7	Brickmaking m/c	1	-	1	
8	Glazing oven	1	-	1	
9	Brick kiln	1	-	1	
10	Equipments for testing materials	lot			
	Total Cost of the Machinery	=	KE 10,000		

Appendix C

SECTION: TEXTILE INDUSTRY

SUB-SECTION: GARMENTS MANUFACTURE

20 TRAINEES

Serial No.	Particulars	No. of Machines			Remarks
		Total	Existing	New	
1	Electric Cloth Cutting Machine	3	1	2	
2	Industrial Sewing Machine (Electrical)	13	13	--	
3	Industrial Sewing Machine (Pedal)	10	10	--	
4	Domestic Sewing Machine (Pedel)	5	1	4	
5	Zig-Zig Sewing Machine	2	1	1	
6	Embroider Sewing Machine	2	1	1	
7	Button Sewing Machines	1	1	--	
8	Bar Tacking Sewing Machine	1	1	--	
9	Chain Stitching	1	1	--	
10	Button Hole Sewing Machine	1	1	--	
11	Industrial Steam Press Machines	2	1	1	
	Total Cost of the Equipment including the cost of repair of the existing machines	=	KE 3,000		

Appendix C

SECTION: TEXTILE INDUSTRY

SUB-SECTION: WEAVING, KNITTING, DYEING AND PRINTING (20 TRAINEES)

Serial No.	Particulars	No. of Machines			Re
		Total	Existing	New	
1	Hand Loom	2	-	2	
2	Power Loom	2	-	2	
3	Hand Knitting M/c	2	-	2	
4	Power Knitting M/c	2	-	2	
5	Stitching M/c	2	-	2	
6	Dying M/c	1	-	1	
7	Drier, spin & squeeze	2	-	2	
8	Ironing machine	1	-	1	
9	Screen Printing Equipment	1	-	1	
10	Photographic Equipment for making silk screen	1	-	1	
	Total Cost of the Equipment	=	KE 30,000		

Appendix C

SECTION: JEWELERY & WATCH REPAIR

(10 TRAINEES)

Serial No.	Particulars	:No. of Machines			Remar
		Total	Exist-ing	New	
1	Automatic Jewelery Making M/c	2	-	2	
2	Watch Repair Kits	3	-	3	
Total	Cost of the Equipment	=	KE 20,000		

PROTOTYPE DEVELOPMENT

Serial No.	Particulars	No. of Machines			Remar
		Total	Existing	New	
1	Copying Lathe	1	-	1	
2	Other Lathes -				
	High Speed Precision Lathe	1	-	1	
	Centre Lathe	1	-	1	
	Universal Lathe	1	-	1	
	Turret lathe	1	-	1	
	Suppercut Lathe	1	-	1	
3	Millers - Electronical Controlled	1	-	1	
	Universal	1	-	1	
	Vertical	1	-	1	
4	Plaining Machine	1	-	1	
5	Drilling Machines - Pillar				
	Multi Spindle	1	-	1	
	Bench	1	-	1	
6	Drilling & Boring M/C	1	-	1	
7	Cylindrical Grinding M/C	1	-	1	
8	Internal Grinding M/C	1	-	1	
9	Universal Tool & Cutter Grinder	1	-	1	
10	Surface Grinding M/c	1	-	1	
11	Gear Shaper	1	-	1	
12	Gear Hobbing Machine	1	-	1	
13	Jig Boring Machine	1	-	1	
14	Broaching M/C	1	-	1	
15	Horizontal Cold Chamber die Casting Machine	1	-	1	

Appendix C

PROTOTYPE DEVELOPMENT

Serial No.	Particulars	No. of Machines			Rema
		Total	Existing	New	
15	8 Station, Rotary indexing M/C	1	-	1	
16	Induction Hardening M/c	1	-	1	
17	Universal Testing M/C	1	-	1	
18	Die Sinking Machine	1	-	1	
19	Heat Treatment Furnace	1	-	1	
20	Press	1	-	1	
21	Crack Detector Machine	1	-	1	
22	Tools	lot		lot	
	Total Cost of the Equipment	=	K£ 360,000		

Appendix D

INTERVIEWS OF SELECTED KITI GRADUATES BY THE MEMBERS OF THE COMMITTEE

The Committee decided that some graduates of KITI be interviewed with a view to obtaining information about:

a) their background prior to joining KITI,

b) their experiences at KITI,

c) their activities after KITI, and

d) their analysis of the KITI's training and comments and suggestions in retrospect.

In all, ten graduates were interviewed and below are brief records of the interviews.

1. Mr. J.G. Koko - Thika

Interviewed by Prof. A.D. Bohra, Dr. A.D. Monteiro, Mr. S.E. Joseph, Mr. H. Bekker and Mr. D.L.A. Ocheing.

Mr. Koko is employed as an Electrical Engineer by Kenya Torry Mills in Thika.

Mr. Koko comes from rural Siaya District. Before he joined KITI, he had obtained "A" level education in 1968. In 1969, Mr. Koko joined Brooke Bond Liebig (K) Ltd., as a trainee for electrical technician. It was then that his employer sponsored him to KITI.

He spent part of 1969 and 1970 at KITI and graduated with G.T. II and part II of the C & G from his electrical/electronics course. Mr. Koko returned to his employer, who again sponsore him in 1971 to Kenya Polytechnic for a three year's course.

In 1972, however, Mr. Koko was sponsored for a Government of Japan scholarship for a one year course and because he was KITI alumnus he had little difficulty winning the scholarship. The training in Japan was to prepare him for teaching. He completed his training in Japan and got a certificate but on his return, Mr. Koko joined a six months' course at N.I.V.T.C., instead of KITI. After the training, he was employed by the Kenya Toray Mills Ltd., as an Electrical Supervisor and worked for them for six months.

In 1974, Mr. Koko joined the Ministry of Labour as Electrical Instructor. He kept this job until 1977 when he left to join his former employer, the Kenya Toray (Taitex) Mills, where he is now.

Mr. Koko is ambitious and has a drive. If he had been given some financial and other assistance, he could have started his own workshop. He still thinks that he will one day establish his own manufacturing or service industry and hopes that with some assistance from KITI he would do it soon. He also feels that there should be some definite follow-up programme of KITI graduates. And to assist KITI graduates even more, short-term skill improvement courses should be offered also.

2. Mr. P. Kavilu

Interviewed by Prof. A.D. Bohra, Dr. A.D. Monteiro, Mr. S.E. Jose Mr. H. Bekker and Mr. D.L.A. Ochieng.

Mr. Kavilu is employed as a Production Manager at Tarps Ltd., a K.I.E. client.

Mr. Kavilu hails from Eastern Division of Kitui District. Mr. Kavilu's father was a leather merchant. After his Form III education, Mr. Kavilu joined Afro-Leather Goods as a designer trainee in 1971 and left in 1973 (at a salary of 200/- per month), in order to join KITI. He went to KITI in order

3. Mr. Michael Wajewa

Interviewed by Dr. A.D. Monteiro and Mrs. S. Alambo

Mr. Jajewa hails from the Western Province and his father is working in the Post and Telegraph Office.

Mr. Wajewa is a self employed Carpenter who was trained in KITI in 1976. He had completed his "O" Levels in 1972 and had also a Carpentary course for two years in the Waitheka Technical Centre of the City Council before joining KITI.

He saw the advertisement in a newspaper regarding the KITI course for which he submitted application and was selected. He undertook the one-year course in Woodwork, Technical Drawing and Designing, Basic Mathematics and some aspects of management of a small industry. He passed the Grade II examination with a C+ from KITI.

After graduating from KITI, Mr. Wajewa wanted to start a carpentry workshop but could not find enough money to buy the necessary handtools. He, therefore, went in search of a job. He secured temporary contract jobs from different city carpenters, but was handicapped because he had no tools of his own. Quite often, he borrowed tools and undertook contract jobs by taking 50% of the value of the contract as advance to buy the necessary timber and wood. He continued in this fashion for about two years and gradually acquired tools worth about K.Shs 6,000.

He is currently making furniture, using the garage in his father's house as his workplace. His total turnover is about K.Shs 5-6,000 a month. He has one helper.

to improve his skills and know-how needed for starting his own unit. Mr. Kavilu graduated from KITI with a B Certificate and G.T.T. I.

On graduation, Mr. Kavilu could not get any assistance for starting a workshop. So he joined Afro-Lite Co. in 1974 as a cutter for one month. Later, he moved to 910 Investment Company (Now Mutunguni V.P.), where he worked from 1975 - 1977. He was offered a job as Designer and foreman by his former employer, Afro-Leather, at a salary of 1,300/- per month. and Mr. Kavilu promptly accepted. He worked for 7 months and after saving 3,000/- he resigned to start his own business.

He could not get a shed so he decided to use his house for making leather articles and shoes. He employed two workers and made over 2,000/- per month profit. Because he could not get a licence to run his business, Mr. Kavilu closed his business and joined Nairobi Handbags Manufacturer in Nakuru as a designer. While at Nakuru, he was sponsored by his employer to the K.T.T.C., where he obtained a "C" Certificate. In 1979, Mr. Kavilu left his job and joined KITI for 7 months as a Workshop Artisan. His former employer, Tarps, offered him a job again, this time as Factory Manager at 3,000/- p.m. and Mr. Kavilu promptly resigned from KITI.

Mr. Kavilu feels that KITI graduates are almost abandoned after the training. Further, the training at KITI concentrates on shoe making. He feels that the training should give more attention to leather and plastics goods.

Mr. Kavilu is confident that if he could get 20,000/- as loan, a shed and working equipment similar to what he has at Tarps, he can start a workshop of Tarps's size with no difficulty and repay all the loans.

He had contacted the Kisumu Industrial Estate for a shed to make furniture. As the Kisumu KIE has already a unit making furniture, they have advised him to manufacture different varieties of wooden handles for export to Sweden. The Kisumu K.I.E. has prepared a Feasibility Report to manufacture handles for export. The total investment in the project is estimated at K.Shs 50,000, of which he is expecting 90% as loan from the K.I.E.

An important hurdle experienced by Mr. Wajewa on completion of his KITI course was that he had no tool kit to go about his job and also no advice or guidance about how to set up a small unit to make furniture. If he could have borrowed money on his personal security to buy a tool kit, he thinks he would have had an earlier and a better start in life.

He feels that the KITI training was adequate from the technical point of view, but its extension to cover important aspects of business management would have enhanced its utility.

4. Mr. Augustus Makhoka - Kenyatta University College

Interviewed by Prof. A.D. Bohra, Dr. A.D. Monteiro and Mr. D.L.A. Ochieng.

After completing his training at the KITI in 1978, Mr. Augustus Makhoka has been working as a Joiner at Kenyatta University College in the Fine Arts Department.

Mr. Mokhoka was educated upto form III, but since he lacked resources to pay the school fees, he left the school and joined YMCA in 1970 for Carpentry training. He obtained G.T. III and in 1971 joined East African Shipping Lines as a Carpenter.

In 1972, he left the Shipping Lines and worked for a local Carpenter in Nairobi before he took up employment with the Post Office in 1974. He left the Post Office in 1977 to take up training at KITI. While at KITI, he got a G.T.T. I and a KITI Certificate Grade "C".